RECORD NO. 15-1918

In The
United States Court of Appeals
For The Fourth Circuit

DEBORAH H. RIPLEY, individually and as Administrator of the Estate of Bernard W. Ripley, deceased,

Plaintiff – Appellee,

and

BERNARD W. RIPLEY,

Plaintiff,

v.

FOSTER WHEELER LLC;
FOSTER WHEELER ENERGY CORPORATION,

Defendants – Appellants,

and

J. HENRY HOLLAND CORPORATION; WACO, INCORPORATED; METROPOLITAN LIFE INSURANCE COMPANY; UNION CARBIDE CORPORATION; SB DECKING, INC., a/k/a Selby Battersby; AURORA PUMP, CO; IMO INDUSTRIES, INCORPORATED, as successor in interest to Delaval Pumps; GOULDS PUMPS, INCORPORATED; INGERSOLL-RAND COMPANY; WARREN PUMPS, INCORPORATED; CRANE COMPANY; GRINNELL CORPORATION; THE J.R. CLARKSON COMPANY, individually and as successor by mergers to Kunkle Industries, Inc.; MILWAUKEE VALVE COMPANY; FLOWSERVE US, INC., individually and as successor in interest to Rockwell Edward Valves and Vogt Valves; SPIRAX SARCO, INC.; ARMSTRONG INTERNATIONAL, INC., individually and as a successor to Armstrong Machine Works,

Defendants.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA AT NEWPORT NEWS

BRIEF OF APPELLEE

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UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT
DISCLOSURE OF CORPORATE AFFILIATIONS AND OTHER INTERESTS

Disclosures must be filed on behalf of all parties to a civil, agency, bankruptcy or mandamus case, except that a disclosure statement is **not** required from the United States, from an indigent party, or from a state or local government in a pro se case. In mandamus cases arising from a civil or bankruptcy action, all parties to the action in the district court are considered parties to the mandamus case.

Corporate defendants in a criminal or post-conviction case and corporate amici curiae are required to file disclosure statements.

If counsel is not a registered ECF filer and does not intend to file documents other than the required disclosure statement, counsel may file the disclosure statement in paper rather than electronic form. Counsel has a continuing duty to update this information.

No. 15-1918 Caption: Ripley v. Foster Wheeler LLC; Foster Wheeler Energy

Pursuant to FRAP 26.1 and Local Rule 26.1,

Deborah H. Ripley, as Adminstrator of the Estate of Bernard W. Ripley, dec., and
(name of party/amicus)

Bernard H. Ripley

who is Appellee, makes the following disclosure:
(appellant/appellee/petitioner/respondent/amicus/intervenor)

1. Is party/amicus a publicly held corporation or other publicly held entity? ☐ YES ☑ NO

2. Does party/amicus have any parent corporations? ☐ YES ☑ NO
If yes, identify all parent corporations, including all generations of parent corporations:

3. Is 10% or more of the stock of a party/amicus owned by a publicly held corporation or other publicly held entity? ☐ YES ☑ NO
If yes, identify all such owners:

4. Is there any other publicly held corporation or other publicly held entity that has a direct financial interest in the outcome of the litigation (Local Rule 26.1(b))? ☐YES ☑NO
If yes, identify entity and nature of interest:

5. Is party a trade association? (amici curiae do not complete this question) ☐ YES ☑NO
If yes, identify any publicly held member whose stock or equity value could be affected substantially by the outcome of the proceeding or whose claims the trade association is pursuing in a representative capacity, or state that there is no such member:

6. Does this case arise out of a bankruptcy proceeding? ☐ YES ☑NO
If yes, identify any trustee and the members of any creditors' committee:

Signature: _____ Date: August 14, 2015

Counsel for: Deborah H. Ripley

CERTIFICATE OF SERVICE

****

I certify that on August 14, 2015 the foregoing document was served on all parties or their counsel of record through the CM/ECF system if they are registered users or, if they are not, by serving a true and correct copy at the addresses listed below:

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JURISDICTIONAL STATEMENT

Foster Wheeler removed this case from state court under 28 U.S.C. § 1442(a)(1). The district court found it had no subject matter jurisdiction because there was no conflict between Foster Wheeler's tort duty to warn and its government contracting duties under *Boyle v. United Techs. Corp.*, 487 U.S. 500, 508 (1988). Accordingly, the district court entered an order remanding the case to state court. Under 28 U.S.C. § 1447(d) this Court has limited appellate jurisdiction to review orders remanding cases removed under 28 U.S.C. § 1442.

STATEMENT OF THE ISSUES PRESENTED

1. Whether a conflict exists under *Boyle*, 487 U.S. at 508, when every federal warning regulation, as well as Foster Wheeler's contract, directed Foster Wheeler to provide warnings in accordance with State and Federal law and told Foster Wheeler to formulate its warnings in accordance with private industry guidelines?

2. Whether a Navy procurement officer would be acting under color of his office if he directed Foster Wheeler to violate at least three federal regulations directing Foster Wheeler to warn?

STATEMENT OF THE CASE

A. Nature Of The Case And Course Of Proceedings.

Bernard Wayne Ripley was diagnosed with malignant mesothelioma on February 24, 2014. On May 6, 2014, Wayne and his wife, Deborah, filed a Complaint in the Circuit Court of Newport News, Virginia against Foster Wheeler and others for their failure to warn Ripley of the hazards of asbestos. (JA 31). The Complaint alleges claims under both Virginia law and under general maritime law pursuant to the "savings to suitors" clause of 28 U.S.C. § 1333, which grants state courts concurrent jurisdiction of *in personam* general maritime claims and prevents removal of such claims absent independent grounds of subject matter jurisdiction. (JA 37, ¶ 7); *Lewis v. Lewis & Clark Marine, Inc.*, 531 U.S. 438, 445 (2001). The Complaint alleges only claims grounded on Foster Wheeler's failure to warn and makes no claim for design defect. (JA 37-38, ¶ 10).

Foster Wheeler removed this case under the Federal Officer Removal Statute, 28 U.S.C. § 1442(a)(1) alleging that it had a colorable government contractor defense under *Boyle*, 487 U.S. at 500. Ripley moved to remand, factually challenging the allegations of Foster Wheeler's Notice of Removal and pointing out that there was no conflict between Foster Wheeler's warning obligations under state and maritime tort law and its obligations under its federal contract, as required by *Boyle*. (JA 83). While the district court was considering the

Motion for Remand, Ripley died and the court granted the Estate's unopposed Motion to Substitute pursuant to Fed. R. Civ. P. 25(a). (JA 1194).[1] By order dated August 6, 2015, the district court found that Foster Wheeler failed to demonstrate a conflict between its tort duty to warn and any discretionary decision by a federal officer and granted Ripley's Motion for Remand. (JA 1196). Foster Wheeler appealed. (JA 1201).

B. Statement Of The Facts.

(1) The Procurement Contract, MIL-STD-129, MIL-STD-1341, Fed. Std. 313, and MIL-B-18381 Required Foster Wheeler to Warn.

Mr. Ripley was exposed to asbestos dust from Foster Wheeler boilers during his work as a civil service boilermaker both on Navy ships and in the Norfolk Naval Shipyard's shops from 1969 to 1972 and again from 1974 until the late 1970s. (JA 36, ¶ 5). Foster Wheeler manufactured and supplied many of the boilers and associated equipment that Ripley worked on, including the main propulsion boilers for USS Mt. Whitney and USS America. (*See* JA 124, 127). Ripley proffered the Purchase Order ("P.O.") for the Foster Wheeler boilers on USS Mt. Whitney. (JA 127-188). In addition to purchasing two boilers, the P.O. also required Foster Wheeler (a) to provide onboard repair parts and spare parts,

[1] For simplicity, "Ripley" will refer to Bernard Ripley, Deborah Ripley and Bernard Ripley's estate, collectively, unless context demonstrates otherwise.

including asbestos products (JA 149-153), (b) to provide technical services of Foster Wheeler employees to supervise erection of the boilers at the shipyard, supervise lighting of the boilers, and train the ship's crew on boiler operation, maintenance, repair and calibration, (JA 131), and (c) to prepare and provide technical manuals for the operation and maintenance of the boilers, (JA 148, 215).[2]

The P.O. incorporated by reference the Navy's boiler specification, MIL-B-18381B, and largely tracked that specification paragraph by paragraph. (*Id.*). The P.O., together with MIL-B-18381B and the military specifications and standards incorporated by reference into these documents, constituted Foster Wheeler's contract for the propulsion boilers on USS Mt. Whitney. Foster Wheeler failed to proffer any competing contract or to challenge the veracity of the USS Mt. Whitney contract.

By its incorporation of MIL-B-18381B, the contract directed Foster Wheeler to mark the "interior packages and exterior shipping containers" of its boilers and their associated parts "in accordance with the contractor's commercial practice." (JA 218, ¶ 5.1.1.3). Thus the government delegated to Foster Wheeler the discretion to include any markings or warnings that would be required in

[2] The shipyard also ordered replacement asbestos gaskets for Foster Wheeler boilers when ships containing Foster Wheeler's boilers returned to shipyards for repairs and overhauls. (JA 189-190). By ordering repair parts directly from Foster Wheeler, the shipyard intended to "procure material identical to that procured" originally for the boilers. (JA 189).

accordance with Foster Wheeler's normal commercial practice pursuant to state and federal law.

The boiler specification, moreover, required Foster Wheeler to label all onboard repair parts in accordance with the Department of Defense's (DOD's) MIL-STD-129. (JA 218, ¶ 5.1.2). In turn, MIL-STD-129 required Foster Wheeler to include warnings for all hazardous materials supplied to the Navy. (JA 239, at ¶ 2.2.10.4.3).

Through its incorporation in the boiler specification, MIL-STD-129 constituted part of Foster Wheeler's contract with the Navy. This DOD regulation was initially promulgated in the early 1950s and was "mandatory for use by the Departments of the Army, the Navy, and the Air Force." (JA 237-238). By 1957, MIL-STD-129B, and every subsequent version, required contractors like Foster Wheeler to include warning labels for "hazardous chemicals":

> 2.2.10.4.3 Hazardous chemicals. All package units of hazardous chemicals to be ultimately issued to the consumer who may be exposed to such chemicals under conditions of ordinary use shall have affixed thereto such warning labels as may be required in accordance with the Manufacturing Chemists Association's Manual L-1, A Guide for Preparation of Warning Labels for Hazardous Chemicals or in accordance with appropriate Department of Defense instructions as published which shall take precedence.

(JA 237-239 (emphasis added)). Almost every military product specification, including the boiler specification, MIL-B-18381B, and the specifications covering

the asbestos components of those boilers,[3] incorporated MIL-STD-129 by reference stating:

> 2. 1 The following specifications, standards and drawings, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein.
>
> . . . .
>
> MIL-STD-129 – Marking for Shipment and Storage

(JA 194-195, ¶ 2.1).

As noted above, MIL-STD-129 required Foster Wheeler to warn "as may be required in accordance with the Manufacturing Chemists Association's Manual L-1" ("MCA L-1 Guide"). The MCA was a private trade association. Its L-1 Guide was a comprehensive warning manual directing manufacturers to provide warnings for "hazardous chemicals" and giving guidance on how to format those warnings. The MCA L-1 Guide defined "hazardous chemicals" to include products that produce carcinogenic "dust," such as asbestos products, (JA 233), directed manufacturers to study the requirements of State and Federal warning laws, and told manufacturers that "*the warnings labels suggested in this Manual should be used in addition to, or in combination with, any label required by law.*" (JA 229 (emphasis in original)). Other manufacturers understood that the MCA L-1 Guide and state and federal law

[3] (*See*, *e.g.*, JA 242 & 245, at ¶¶ 2.1 & 5.2 (Insulation block); JA 246-247 & 252, at ¶¶ 2.1 & 3.4 (Pump Packaging); JA 253, at ¶ 2.1 (Pipe Covering Insulation); JA 257 & 260, at ¶¶ 2.1 & 5.2 (High Temperature Cement); JA 261 & 267, at ¶¶ 2.1 & 5.3 (Asbestos Sheet Gasket Material); JA 269 & 272, at ¶¶ 2.1 & 5.3 (Asbestos Cloth Adhesive); JA 274 & 279, at ¶¶ 2.1 & 5.3 (Boiler Fuel Oil Valves)).

required warnings on asbestos products. (JA 240-241, 481). In correspondence in 1964, Johns-Manville's medical director, Kenneth Smith, suggested asbestos warning labels that "follow the format of the Manufacturing Chemists Association which has been standard in this country for many years." (JA 240). The same year, Owens-Corning noted that it relied on the MCA L-1 Guide in formulating warnings for its asbestos products. (JA 241).

In 1969 — the year Ripley began his civil service — DOD published another regulation, MIL-STD-1341. (JA 280). The forward to version A of this DOD-wide standard, likewise, incorporated by reference MIL-STD-129, stating:

> The requirements of this standard are in addition to those of other specifications, standards and regulations, including:
>
> . . . .
>
> MIL-STD-129, which requires labeling in accordance with the Manufacturing Chemists' Association "Guide to Precautionary Labeling of Hazardous Chemicals".

(JA 282). This statement demonstrates an important point. DOD — the agency promulgating these regulations — interpreted MIL-STD-129's incorporation of the MCA L-1 Guide to not just suggest, but require, contractors to include warnings pursuant to the private industry MCA L-1 Guide.[4]

[4] *See*, *e.g.*, *Decker v. NW. Envtl. Def. Ctr.*, 133 S. Ct. 1326, 1337 (2013) (noting that "[w]hen an agency interprets its own regulation, the Court, as a general rule, defers to it 'unless that interpretation is "plainly erroneous or inconsistent with the regulation."'").

Importantly, MIL-STD-1341 contained an explicit definition of "hazardous material" — "[A] hazardous material is defined as a material having one or more of the following characteristics . . . (b) has a threshold limit value below 25 mppcf for dusts . . ." (JA 285). DOD contractors like Foster Wheeler, who engaged in contracts in excess of $10,000, were required to abide by the Walsh Healey Public Contract Act. *See*, *e.g.*, 41 U.S.C. § 6502; 25 Fed. Reg. 13809-13825 (Dec. 28, 1960) (Addendum, at 1). Walsh Healey required that every procurement contract over $10,000 contain a stipulation mandating that the contractor ensure that no work would be performed in working conditions that "are unsanitary, hazardous, or dangerous to the health and safety of employees engaged in the performance of the contract." *Id.* Long before Mr. Ripley went to work as a civil servant in 1969, Walsh Healey had adopted a threshold limit value (TLV) of 5 mppcf for asbestos dust. (Addendum, at 16, 25 Fed. Reg. at 13824).[5] Thus Foster Wheeler knew that it was

[5] The TLV in this particular 1960 federal register is given in terms of millions of particles per cubic **meter** (mppcm), instead of the usual dust unit of millions of particles per cubic **foot** (mppcf). Even so, a TLV of 5 mppcm would convert to a TLV of 0.14 mppcf and would still meet MIL-STD-1341's and Fed. Std. 313's definition of a hazardous material requiring a warning.

required by contract and regulation to include warnings for its asbestos products because the TLV for asbestos met MIL-STD-1341's 25 mppcf threshold.[6]

At about the same time, the federal government also published Federal Standard 313, which is virtually identical to MIL-STD-1341 except that it was "mandatory on all Federal agencies." (JA 286). The purpose of Fed Std. 313 was to "provide for submission of Material Safety Data Sheets by contractors and manufacturers to designated Government activities." (*Id.*) Like MIL-STD-1341, Fed. Std. No. 313 incorporated MIL-STD-129 and the MCA L-1 Guide. (JA 287). And like MIL-STD-1341, this regulation required warnings for any dust producing material that had a TLV less than 25 mppcf — like asbestos.

Accordingly, the procurement contract, MIL-B-18381B, MIL-STD-129, MIL-STD-1341, and Fed. Std. 313 all required Foster Wheeler to warn of the hazards of asbestos in accordance with the private industry standards set forth in the MCA L-1 Guide, which, in turn, directed manufacturers to study and comply with State and Federal law.

[6] Additionally, as noted above, part of Foster Wheeler's contract with the Navy required Foster Wheeler to provide its own employees to supervise the building of the boilers at the shipyard, supervise lighting of the boilers, and train the ship's crew on boiler operation, maintenance, repair and calibration. Thus to satisfy the safe-work-conditions stipulation under Walsh Healey, Foster Wheeler knew, or should have known, that it was required to warn and protect its own employees at the shipyard to ensure they were not exposed to carcinogenic asbestos dust.

(2) MIL-STD-755, NAVSUP Pub. 4500, and the 1956 SECNAV Letter Required Officers in the Department of the Navy and in DOD to Defer to Manufacturers' Warnings.

In 1956, the Secretary of the Navy (SECNAV) issued a letter on the "Uniform labeling program for hazardous industrial chemicals and materials." (JA 320, the "1956 SECNAV Letter"). This instruction established a *supplemental* labeling program that operated within the Navy. By 1960, this program was reflected in a DOD-wide regulation, MIL-STD-755. In the letter, the Secretary of the Navy was careful to state:

> This Instruction is not intended to govern:
>
> a. The type of labels to be affixed by the manufacturer. (These are governed by **State and Federal laws and regulations** depending on the nature of the material and whether the shipment is interstate or intrastate. In addition, most major manufacturers of chemicals abide by the "Warning Labels Guide" published by the Manufacturing Chemists' Association.)

(JA 320 (emphasis added)). Thus, the Secretary of the Navy — "the head of the Department of the Navy," *see* 10 U.S.C. § 5013 — told all Navy personnel that manufacturers, like Foster Wheeler, were expected to label their products in accordance with *State and Federal laws*, that most manufacturers used the same MCA L-1 Warning Labels Guide that was incorporated by reference into MIL-STD-129, and that the Navy's internal uniform labeling program *did not* govern manufacturers' warnings. (*Id.*).

In the 1960s, the Navy also published NAVSUP Pub. 4500. (JA 300). Under this directive, the Navy reiterated that any *supplemental* labels affixed by the government pursuant to the SECNAV's letter or MIL-STD-755 were intended to "supplement . . . any other label/marking applied by the MCA (Manufacturers Chemist Association), NFPA (National Fire Protective Association), **and/or manufacturer**." (JA 303 (underline in original, bold added)). Significantly, NAVSUP Pub. 4500 further dictated that the government's "supplemental labels shall not cover, or cause to deface or remove any other hazardous labels/markings affixed to the containers in accordance with the preceding regulations" — i.e., those affixed by the manufacturer. (JA 303 (emphasis in original)). Thus MIL-STD-755 and NAVSUP Pub. 4500 considered manufacturers' labels, which were to be provided pursuant to the MCA L-1 Guide and State and Federal law, to be preeminent.

Importantly, there would be no need for the Navy to supplement manufacturers' warnings with additional warnings under MIL-STD-755, NAVSUP Pub. 4500, and the 1956 SECNAV letter if the government dictated manufacturers' warnings in the first instance. Thus the very existence of a supplemental program within the Navy refutes Foster Wheeler's contention that the Navy exercised pervasive control over manufacturers' warnings.

(3) The DOD Officials Who Actually Drafted, Implemented and Enforced DOD's Warning Standards Testified that DOD Regulations Delegated Decision-Making Discretion for Warnings to Contractors.

During the 1980s, asbestos defendants brought third party claims against the United States in the Eastern District of Virginia and elsewhere. During that litigation, the DOD officials who actually drafted, implemented and enforced DOD's warning standards — unlike Foster Wheeler's paid affiants — testified that nothing in DOD's regulations restricted or prohibited asbestos warnings. For instance, Alvin Anceravage, who was head of Naval Sea Systems Command's Packaging and Container Section from 1965 until at least 1979 (the entire period of Ripley's asbestos exposure), testified that he knew of nothing "in any of the regs or specs or standards . . . that would prohibit a manufacturer or supplier of an asbestos-containing product from attaching a safety or warning label to the container of that product." (JA 489, 507-509). He also knew of nothing "in the regs or specs or standards that [he had] been discussing today [that would] preclude a manufacturer from" warning and he was never even "contacted by any representatives or manufacturers of asbestos-containing products informing [him] about the possibility of attaching a warning label" relating to asbestos (JA 509-510). Importantly, he testified that MIL-STD-129 set the "minimum requirements" for package labels and that "[t]he contractor can put anything on a package." (JA 506-507). In fact, he had "never seen any objection to a manufacturer using his

commercial package so long as his commercial package met the requirement of the packaging requirements of that commodity." (JA 507). And as noted above, Foster Wheeler was directed to use its commercial packaging for its boilers and boiler parts, and one of the minimum requirements of MIL-STD-129 was warnings for hazardous materials including carcinogenic dust, such as asbestos.

Another DOD official, Adam Martin, began working at a military packaging center in 1952, worked directly with MIL-STD-129 his entire career, and was DOD's Action Officer for MIL-STD-129 when he was deposed in asbestos litigation in the Eastern District of Virginia in 1983. (JA 513-521). He testified that there was nothing "in Mil 129 which would have prohibited warnings on sheets of paper being inside of the packages," (JA 523-24), and that there are provisions in "Mil Standard 129 that require[] warnings on hazardous packages or on hazardous packages that contain hazardous materials," (JA 526).[7]

[7] During this litigation, some defendants attempted to claim that MIL-STD-129 prohibited asbestos warnings. In addition to the above testimony refuting this argument, the United States also denied requests for admissions to this effect. (JA 305-319).

Henry Murad, a high level procurement officer, likewise testified that "We didn't — the specifications did not prohibit anyone, any supplier, from putting any kind of warning on" their products. (JA 5050-551).[8]

Neither Foster Wheeler nor any other manufacturer has ever produced a single standard, specification, directive, or communication from the government that demonstrates any discretionary decision by a federal officer to limit asbestos warnings on products. This litigation has been ongoing for over three decades; if there was such a document, defendants like Foster Wheeler would have found it and produced it by now.

(4) The Boiler Plate Affidavits of Foster Wheeler's Paid Experts Fail to Identify Any Regulation to the Contrary.

Because it has no documents to the contrary, Foster Wheeler relies on conclusory, boiler-plate affidavits executed by its paid affiants — a retired Foster

[8] Additionally, Kenneth Nelson, an employee of the US Maritime Commission and the US Navy who was involved in enforcement of labeling and industrial hygiene beginning in the 1940s, testified in asbestos litigation in the Eastern District of Virginia in 1985:

> Q. All right. So would I be correct that you know of no reason why it was either not feasible or not possible for asbestos manufacturers to put a warning on the cartons of their asbestos products that the product could possibly be dangerous; is that correct?
>
> A. It could have been done. It was not done.

(JA 532, 539-540).

Wheeler executive, Thomas Schroppe, and a retired Navy Reserve officer, Admiral Ben Lehman.[9] Schroppe and Lehman claim that Foster Wheeler's failure to warn was dictated by the Navy. (JA 586, at ¶ 22; JA 611, at ¶ 14). But Lehman never identified any specific writing at all, and the only document Schroppe identifies is MIL-B-18381, which, as shown above, directly contradicts Schroppe's opinion on warnings by telling Foster Wheeler to label its boilers in accordance with its "commercial practices" and MIL-STD-129. Not only do they fail to produce a single DOD document to support their opinions, they also fail to produce a single contemporaneous Foster Wheeler document, a document from any other product manufacturer, evidence of any kind of back and forth discussions between Foster

[9] Lehman served little time on active duty (from 1942 to 1944, the fall of 1950 to the spring of 1952, and from 1952 to 1954). During these limited periods, he admitted that he had nothing to do with new vessel construction or procurement, and nothing to do with vessel propulsion plants, including boilers. (JA 955-960). When asked when he first became involved with any process related to approval of designs, plans, or drawings, he testified that it was not until he was employed in private industry by Lockheed Ship Building from 1969 to 1972 and later by Litton Industries from 1972 to 1975. (JA 972-973). So, his sole experience with the Navy procurement and approval process — to the extent he has any at all — was from his work in private industry, not the Navy.

Wheeler and the Navy on the subject, or even an internal "CYA" memorandum referring to this phantom control of warnings.[10]

Additionally, since writing these boiler-plate affidavits, both affiants have testified that they have no factual basis for their opinions.[11] Schroppe's affidavit mainly discusses the design of boilers, which is not at issue here. *See Tate v. Boeing Helicopters*, 55 F.3d 1150, 1156 (6th Cir. 1995) ("Simply because the government exercises discretion in approving a design does not mean that the government considered the appropriate warnings, if any, that should accompany

[10] Foster Wheeler, itself, contradicts this phantom control-of-warnings argument. In its technical manual for USS Kitty Hawk, Foster Wheeler included warnings which were for well known hazards like using protective gloves and goggles when handling sodium nitrite (a common food preservative used as an anti-corrosive), (JA 331), warning to wear protective goggles when grinding, (JA 332), and warning to provide adequate ventilation when using cleaning solvent, (JA 333).

[11] Ripley moved to strike these affidavits, (JA 87), but that motion was denied as moot when the court granted Ripley's Motion for Remand, (JA 1200). Many other courts have either disregarded, or completely struck, these affidavits and similar affidavits. *See McMann v. Air & Liquid Sys. Corp.*, 2013 WL 5738926, at *2 (W.D. Wash. Oct. 22, 2013) (disregarding affidavits because they are speculative); *Stephens v. A.W. Chesterton, Inc.*, 2009 WL 3517560, at *3 (S.D. Ill. Oct. 22, 2009) (disregarding affidavits because they do not include the actual contracts or specifications); *Hilbert v. McDonnell Douglas Corp.*, 529 F. Supp. 2d 187, 200, 201 (D. Mass. 2008) (disregarding affidavits because they are speculative); *Sether v. Agco Corp.*, 2008 WL 1701172, at *4 (S.D. Ill. Mar. 28, 2008) (disregarding affidavits because of doubts they are based on adequate personal knowledge and fail to include exemplar contracts or specifications); *Westmiller v. Imo Indus., Inc.*, 2005 WL 2850334, at *1 (W.D. Wash. Oct. 20, 2005) (striking an affidavit because "[a]bsent the actual specifications, Dr. Cushing's conclusory statements about what the specifications would have stated amount to mere speculation and are not admissible.").

the product."); *In re Joint E. & S. Dist. New York Asbestos Litig.*, 897 F.2d 626, 630 (2d Cir. 1990) ("[W]e do not see how a federal contract specification requiring a certain product *design* conflicts with state law requiring a certain set of warnings incident to use of that product or design." (emphasis added)). Only the last two paragraphs give any opinions about warnings, and Schroppe fails to cite a single document to support these opinions. This is because, as he admitted on cross examination, he "never dealt individually with those specs." (JA 323). Schroppe further testified that, if there was a provision relating to asbestos warnings, "presumably that would have been part of the initial contract," but he did not know for sure. (JA 324). But, again, the contract told Foster Wheeler to warn in accordance with its commercial practice and in accordance with MIL-STD-129, which, in turn, told Foster Wheeler to comply with *State and Federal* law. Ultimately, Schroppe admitted that he could not "speculate" about what form this phantom warning control policy would take, and agreed that he had "never seen a document from the Navy prohibiting health warnings," and he had never seen "a document indicating that Foster Wheeler was discussing the existence or nonexistence of health warnings on containers from thermal insulation manufacturers." (JA 324-326).

Likewise, Lehman has no factual basis for his opinion. He fails to cite a single specific regulation, standard or specification in his affidavit. He admitted

that his duties during his limited time on active duty, *see supra* note 9, never brought him in contact with the MCA L-1 Guide, (JA 349), his duties never required him to work with MIL-STD-129, itself, (JA 360), he did not recall any personal experience in the Navy regarding the preparation of warning labels, (JA 355), he admitted that his job duties never involved shipping or receiving asbestos products or the interpretation of MIL-STD-129, (JA 418), he agreed that he had never even heard of MIL-STD-129 until after he retired from the Navy, (JA 418-419), he admitted that he is not aware of any DOD instruction that contradicted any information in the MCA L-1 Guide, as incorporated by MIL-STD-129, and he admitted that his job duties did not even involve knowing that information, (JA 364). Lehman also admitted that he had never seen NAVSUP Pub. 4500 and MIL-STD-755 until his deposition (years after he executed his affidavit) and that his job duties never involved the use, interpretation or knowledge of these Navy warning documents, (JA 374-379); nor did he have any personal experience using MIL-STD-1341, (JA 380-381). Lehman also admitted that he had no personal knowledge that the Navy ever rejected any asbestos manufacturer's recommendation for safety procedures; nor had he ever reviewed any correspondence to that effect. (JA 448-449). To the contrary, when confronted with these regulations, he agreed that they told manufacturers to make recommendations

for safety, prompting Foster Wheeler's attorney to move to strike his own expert's answer. (JA 465).

Ultimately, in the face of the documentary evidence he was confronted with during his deposition, Lehman recanted from the phantom warning policy he advocated in his affidavit.

> Q MR. HATTEN: That's my point. **Would I be correct that containers of asbestos products that had asbestos labels on the containers would be acceptable to the navy pursuant to MIL SPEC 129**?
>
> A **THE WITNESS: Yes**.

(JA 417 (emphasis added); *see also* JA 401 (admitting that the government did not reject pipe coverings that had asbestos warnings on the containers)).[12]

SUMMARY OF ARGUMENT

The federal officer removal statute permits removal of civil actions by "any officer (or any person acting under that officer) of the United States or of any agency thereof, in an official or individual capacity, for or relating to any act under color of such office . . . ." 28 U.S.C. § 1442(a)(1) (emphasis added). Foster Wheeler must prove that (i) it is a person within the meaning of the statute, (ii) there is a "causal nexus" between its failure while acting under a federal officer acting

[12] In its Opposition to Ripley's Motion to Remand, Foster Wheeler supplied an additional affidavit by Captain Betts. This affidavit did not discuss Navy policy regarding provision of warnings and only claims that the Navy already knew about the hazards of asbestos. Ripley discusses Betts' affidavit later in this brief.

under color of office and Ripley's injuries, and (iii) it has a "colorable federal defense."

Foster Wheeler cannot satisfy the second and third elements of this test because it cannot show that any federal officer acting "under color of office" had the discretionary authority to violate DOD's regulations — MIL-STD-129, MIL-STD-1341, Fed. Std. 313, or MIL-B-18381B — by directing Foster Wheeler, in the face of these regulations, not to warn. In other words, to find removal proper in this case, this Court would have to believe that each of the Navy procurement officers overseeing procurement of each of Foster Wheeler's boilers had the discretion to violate at least two DOD regulations, one federal regulation, the Navy boiler specification, and plain language of the contract itself, all of which directed Foster Wheeler to formulate and provide warnings with its asbestos containing boilers in accordance with MIL-STD-129, the MCA L-1 Guide, its commercial practice, and State and Federal law. Because no federal procurement officer had discretion to prohibit warnings in the face of these regulations and directives, Foster Wheeler cannot claim that it failed to include warnings due to the exercise of valid federal discretionary authority by the various Navy procurement officers overseeing the boiler contracts.

Generations of district court judges in the Norfolk division of the Eastern District of Virginia, such as Judge MacKenzie, Judge Clarke, Judge Kellum, Judge

Smith, Judge Friedman and Judge Jackson, after analyzing the evidence in Navy asbestos product liability cases, found that the government contractor defense was unavailable for failure to warn claims involving asbestos products supplied to the Navy. *See*, *e.g.*, *McCormick v. C.E. Thurston & Sons, Inc.*, 977 F. Supp. 400, 403 (E.D. Va. 1997) (noting that "in the thousands of asbestos cases that have preceded, the United States District Court for the Eastern District of Virginia has determined that the government contractor defense is not available in 'failure to warn' cases.").[13] They reached this conclusion after reviewing the evidence offered by similarly situated defendants and the United States in summary judgment motions, pre-trial motions in limine, and at trial. Not once did any of those defendants — and not once does Foster Wheeler, here — offer any actual regulation, specification, policy letter or other communication from the government rejecting an asbestos warning, modifying an asbestos warning, or even considering an asbestos warning proffered by one of these defendants. Moreover, not once did any of these defendants appeal the district court's longstanding order finding the government contractor defense unavailable during the federal litigation in the Norfolk and Newport News divisions of the Eastern District of Virginia. Now, Foster Wheeler

[13] Ripley is not aware of any decision in the Eastern District extending this holding beyond the context of Navy asbestos exposure in product liability actions.

asks this Court to ignore this extensive history and take the unfounded boiler-plate affidavits of its unqualified experts at face value.

ARGUMENT

I. Standard Of Review.

Whether subject matter jurisdiction exists is a question of law that this Court reviews *de novo*. *Trans Energy, Inc. v. EQT Prod. Co.*, 743 F.3d 895, 900 (4th Cir. 2014). Appellate courts do "not review lower courts' opinions, but their judgments." *Jennings v. Stephens*, ___ U.S. ___, ___, 135 S. Ct. 793, 799 (2015). And this Court is "not bound to follow the reasoning of the district court" in affirming the district court's judgment. *Wash. Square Sec., Inc. v. Aune*, 385 F.3d 432, 435 n.2 (4th Cir. 2004); *see also Schweiker v. Hogan*, 457 U.S. 569, 585 n.24 (1982) ("It is well accepted. . . that without filing a cross-appeal or cross-petition, an appellee may rely upon any matter appearing in the record in support of the judgment below.").

The Federal Officer Removal Statute, 28 U.S.C. § 1442 does not provide the necessary jurisdiction for removal; it "merely serves to overcome the 'well-pleaded complaint' rule which would otherwise preclude removal even if a federal defense were alleged." *Mesa v. California*, 489 U.S. 121, 136 (1989). "Section 1442(a), therefore, it cannot independently support Art. III 'arising under' jurisdiction. Rather, it is the raising of a federal question in the officer's removal petition that

constitutes the federal law under which the action against the federal officer arises for Art. III purposes." *Id.*

Foster Wheeler bears the burden of proving Article III subject matter jurisdiction through proof of jurisdictional facts supporting a colorable federal defense. *Hertz Corp. v. Friend*, 559 U.S. 77, 96-97 (2010). A mere allegation in the removal petition that the conduct complained of occurred "while defendants [were] on duty and acting in the course and scope of [their] employment with the [federal government]" is not sufficient to support removal. *Mesa*, 489 U.S. at 136.

"Subject-matter jurisdiction cannot be forfeited or waived and should be considered when fairly in doubt." *Ashcroft v. Iqbal*, 556 U.S. 662, 671 (2009). A level playing field under *Iqbal* and *Twombly*, as well as Article III itself, demands that any party asserting federal subject matter jurisdiction — whether a plaintiff or a defendant — demonstrate "more than labels and conclusions, and a formulaic recitation of the elements" of the cause of action or, in this case, the defense. *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 555 (2007).

This is particularly true where, as here, Ripley launched a *factual* attack on Foster Wheeler's jurisdictional allegations. "When challenged on allegations of jurisdictional facts," the parties asserting jurisdiction "must support their allegations by competent proof." *Hertz Corp.*, 559 U.S. at 97. Importantly, *Hertz* "reject[ed] suggestions . . . that the mere filing of a form like the Securities and

Exchange Commission's Form 10-K listing a corporation's 'principal executive offices' would, without more, be sufficient proof to establish a corporation's 'nerve center,'" *id.* even though such reports are required to be filed under oath, *see* 15 U.S.C.A. § 7241.[14] Thus, conclusory assertions like Foster Wheeler's affidavits — even when filed under oath — are insufficient to rebut a factual challenge.

Moreover, *Hertz Corp.* cited with approval *McNutt v. Gen. Motors Accept. Corp.*, 298 U.S. 178, 189 (1936), which held that a district court is required "to enforce the limitations of its jurisdiction." *McNutt*, 298 U.S. at 189.

> [This] precludes the idea that jurisdiction may be maintained by mere averment or that the party asserting jurisdiction may be relieved of his burden by any formal procedure. If his allegations of jurisdictional facts are challenged by his adversary in any appropriate manner, he must support them by competent proof. And where they are not so challenged the court may still insist that the jurisdictional facts be established or the case be dismissed, and for that purpose the court may demand that the party alleging jurisdiction justify his allegations by a preponderance of evidence.

Id. Otherwise, "the case shall be remanded." 28 U.S.C. § 1447(c).

Foster Wheeler and most of the opinions it relies upon conflate the well-pleaded complaint exception of 28 U.S.C. § 1442 with the separate requirement of proving Article III subject matter jurisdiction. This conflation makes virtually

[14] *See also In re Commonwealth's Motion to Appoint Counsel Against or Directed to Defender Ass'n of Philadelphia*, 790 F.3d 457, 466 (3d Cir. 2015), *as amended* (June 16, 2015) (noting that federal officer removal may be subject to facial or factual attack); *Leite v. Crane Co.*, 749 F.3d 1117, 1121-1123 (9th Cir. 2014) (discussing the required analysis when there is a factual attack).

every case remotely involving a government contractor removable. They do this by fundamentally misconstruing language from *Willingham* that "[t]he federal officer removal statute is not 'narrow' or 'limited'" and that "it is broad enough to cover all cases where federal officers can raise a colorable defense arising out of their duty to enforce federal law." *Willingham v. Morgan*, 395 U.S. 402, 406-407 (1969). But in making this statement, *Williamham* was construing the federal officer removal statute; it was not lowering the bar for proving sufficient *facts* to support federal subject matter jurisdiction.[15]

Willingham drew this not-narrow-or-limited language from *Colorado v. Symes*, but after making this statement, *Symes* went on to explain what it meant:

> Federal officers and employees are not, merely because they are such, granted immunity from prosecution in state courts for crimes against state law. Congress is not to be deemed to have intended that

[15] One of the earliest cases discussing the "broad" view of the federal officer removal statute explained that its liberality rested in its procedural differences from traditional removal statutes — not in differences in burdens of proof:

> On the other hand, where section 33 is applicable, the conditions for removal are much more liberal. Removal may be had of the civil suit, at any time before trial or final hearing in the state court, regardless of the amount involved and without giving any bond, by filing the appropriate papers in the federal court. And the facts showing that the suit is of a removable class need not appear by the complaint in the state court.

Gay v. Ruff, 292 U.S. 25, 34 (1934). These conditions, along with waiver of the unanimity rule, while broadening the opportunity for removal under § 1442, do not lower the burden of proving jurisdiction with admissible facts.

> jurisdiction to try persons accused of violating the laws of a state should be wrested from its courts in the absence of a **full disclosure of the facts constituting the grounds on which they claim protection under section 33** [now § 1442].

Colorado v. Symes, 286 U.S. 510, 518 (1932) (emphasis added). "[F]ull disclosure of the facts," *Symes* continued, requires that "[t]he burden is upon him who claims the removal plainly to set forth by petition made, signed and unequivocally verified by himself all the facts relating to the occurrence, as he claims them to be, on which the accusation is based. Without such disclosure the court cannot determine whether he is entitled to the immunity." *Id.* at 518-19. The defendant "must by direct averment **exclude the possibility** that it was based on acts or conduct of his, not justified by his federal duty." *Id.* at 519 (emphasis added); *see also Maryland v. Soper*, 270 U.S. 9, 34-36 (1926) (ordering case to be remanded because "to justify so exceptional a procedure" the defendants must "negative the possibility that they were doing other acts than official acts at the time and on this occasion, or make it clear and specific that whatever was done by them leading to the prosecution was done under color of their federal official duty.").[16] And the removing defendant

[16] In fact, *Symes* stated that by invoking the federal officer defense, "a federal officer abandons his right to refuse to testify because accused of crime, at least to the extent of disclosing in his application for removal all the circumstances known to him out of which the prosecution arose." *Symes*, 286 U.S. at 519. In the procedural posture of this case, **Foster Wheeler must be deemed to have admitted it knew the hazards and failed to warn, but claims it was justified in doing so solely because the government forbade a warning**.

"must establish fully and fairly this defense by the allegations of his petition for removal before the federal court can properly grant it." *Id.*

> Subject matter jurisdiction is constitutionally compelled.
>
> Federal courts are courts of limited jurisdiction. They possess only that power authorized by Constitution and statute . . . which is not to be expanded by judicial decree . . . . It is to be presumed that a cause lies outside this limited jurisdiction . . ., and the burden of establishing the contrary rests upon the party asserting jurisdiction . . . ."

Kokkonen v. Guardian Life Ins. Co., 511 U.S. 375, 377 (1994). Nothing about the federal officer removal statute modifies this fundamental, constitutional premise. "Because it alone confers Article III jurisdiction, **the 'colorable' standard requires that a federal court carefully weigh the plausibility of the proffered defense**. . . . [T]his showing, where a contractor must colorably establish that it acted at the federal government's behest, is essential to the Court's Article III jurisdiction." *Holdren v. Buffalo Pumps, Inc.*, 614 F. Supp. 2d 129, 140-41 (D. Mass. 2009) (emphasis added). This is not a heightened burden — it is the normal burden for proving sufficient facts to support subject matter jurisdiction.

Thus, the oft-quoted statement that a defendant need not prove the merits of his federal defense at the time of removal only goes so far. When a party raises a factual challenge to the jurisdictional allegations, the "court's analysis of" those jurisdictional *facts* "focuses on whether a removing defendant has shown a reasonable **probability** that" those jurisdictional *facts* exist. *Amoche v. Guarantee*

Trust Life Ins. Co., 556 F.3d 41, 51 (1st Cir. 2009); *see also United Food & Comm. Workers Union, Local 919, AFL-CIO v. CenterMark Props. Meriden Square, Inc.*, 30 F.3d 298, 305 (2d Cir. 1994) ("Where, as here, jurisdictional facts are challenged, the party asserting jurisdiction must . . . 'justify [its] allegations by a preponderance of evidence.'").

II. Navy Procurement Officers Have No Discretion To Violate DOD and Federal Regulations And, Therefore, Foster Wheeler Cannot Prove The Causal Nexus Requirement Of Federal Officer Removal.

Foster Wheeler is required to show a causal nexus between the conduct charged by Ripley, and the acts performed by Foster Wheeler at the direction of a federal officer. But here, the DOD and federal regulations specifically delegated responsibility for warning to Foster Wheeler. The regulations discussed above, along with the contract, uniformly directed Foster Wheeler to provide all warnings necessary under "State and Federal law" and to formulate them in accordance with the guidelines of the MCA L-1 Guide — a manual published by a private trade association. When the military later decided to promulgate an internal policy for *supplemental* warnings, it emphasized in its regulations and policy letters that these warnings were only intended to supplement the manufacturers' warnings and must not to cover up or deface the manufacturers' warnings. And, through MIL-STD-1341, MIL-STD-129, and Fed. Std. 313, the federal government specified that asbestos warnings (i.e., warnings for carcinogenic dust, and dust with a TLV less

than 25 mppcf) were among the warnings the United States expected manufacturers to formulate and provide. By promulgating these DOD and federal regulations directing Foster Wheeler to warn, the government took the discretionary decision-making authority away from subordinate Navy procurement officers overseeing Foster Wheeler's contracts. In short, a Navy procurement officer was not at liberty to direct Foster Wheeler to ignore these federal regulations.[17]

A federal officer's "conduct cannot be discretionary unless it involves an element of judgment or choice." *Berkovitz by Berkovitz v. U.S.*, 486 U.S. 531, 536 (1988). Accordingly, "the discretionary function exception will not apply when a federal statute, regulation, or policy specifically prescribes a course of action for an employee to follow." *Id.* In such a case, the federal officer "has no rightful option but to adhere to the directive" and if the federal officer's "conduct cannot appropriately be the product of judgment or choice, then there is no discretion in the conduct for the discretionary function exception to protect." *Id.*

[17] Foster Wheeler makes much of the amendments to 28 U.S.C. § 1442 substituting the term "*for or relating to* any act under color of office," for the term "*for* any act under color of office." Ripley's argument, however, focuses on whether a Navy procurement officer, or those acting under that officer, may claim immunity "under color of office" when regulations deprive the officer of any discretionary decision making authority on this issue. To Appellees' knowledge, this argument was not made in any of the cases Foster Wheeler relies upon.

To find a causal nexus in this case, this Court would have to find that the Navy procurement officers overseeing each of Foster Wheeler's boiler contracts acted *outside* of the color of their office by ordering Foster Wheeler to violate at least one federal regulation, two DOD regulations, the boiler specification, and the contracts themselves. Foster Wheeler has failed to offer any evidence whatsoever that a federal officer had authority to prohibit warnings in the face of these regulations and specifications.[18] Because none of the procurement officers supervising Foster Wheeler's contracts had discretion to prohibit warnings in the face of these regulations and directives, Foster Wheeler cannot claim that its failure to provide warnings was causally connected to the discretionary decision of a federal officer.

Ripley's Complaint alleges that Foster Wheeler is liable for failing to warn in accordance with State and Federal law. DOD's regulations required Foster Wheeler to warn in accordance with State and Federal law. And the Navy's

[18] Foster Wheeler engages in semantics when it claims it "need not show that the Navy would have forbidden additional warnings related to the alleged hazards of asbestos . . . ." (Foster Wheeler's Brief of Appellant, at 24 (emphasis added)). First, this case is not about "additional" warnings; it is about Foster Wheeler's wholesale failure to provide any warnings at all. Secondly, the test for federal officer removal requires that Foster Wheeler prove a "causal nexus" between Foster Wheeler's actions (i.e., its wholesale failure to warn) and the directions of a federal officer. If Foster Wheeler was not "forbidden" or "prohibited" from warning, then it cannot demonstrate a causal nexus between its complete failure to warn and the directions of a federal officer.

procurement officers had no discretion to require Foster Wheeler to deviate from those regulations. Accordingly, Foster Wheeler cannot satisfy the causal nexus requirement of § 1442(a)(1).[19] Moreover, there is no conflict between Foster Wheeler's contractual requirements and its requirements under State and Federal tort law — the two are completely congruent.

Importantly, this is not a case involving the *adequacy* of warning language approved by a government contracting officer in the exercise of the contracting officer's discretion. *Cf. Tate v. Boeing Helicopters*, 140 F.3d 654, 657 (6th Cir. 1998) (noting that the government "had gone beyond approval and actually determined for itself the warnings to be provided" and "the contractor provided warnings that not only conformed to the approved warnings but were identical"). This case involves the complete failure to provide any warning at all, even when warnings were required by federal regulations incorporated into the contracts. Thus, while it is possible that a procurement officer might have discretion in

[19] Moreover, because these regulations uniformly delegated the provision and formulation of warnings to Foster Wheeler, Foster Wheeler cannot demonstrate a causal nexus under the normal direction and control analysis, either. *McGee v. Arkel Int'l, LLC*, 716 F. Supp. 2d 572, 575 (S.D. Tex. 2009) (noting that under the typical causal nexus analysis, "'[t]he federal officer must have 'direct and detailed control over the defendant' such that 'the acts that form the basis for the suit were performed pursuant to an officer's direct orders or to comprehensive and detailed regulations.'"). Here, detailed regulations told Foster Wheeler to warn in accordance with State and Federal law. And no Navy procurement officer had discretion to countermand these regulations and direct and control Foster Wheeler in any manner contrary to those regulations.

approving warning language once it is proposed by a contractor, a procurement officer may not exercise discretion to prevent the contractor from proposing warnings in the first instance when those warnings are compelled by federal regulations and the contract. To prohibit a warning in the face of these regulations would make the contracting officer's actions *ultra vires*.

III. Assuming, *Arguendo*, That A Federal Officer Had The Discretion To Violate These Regulations, Foster Wheeler Cannot Satisfy *Boyle*.

A. Foster Wheeler Failed To Demonstrate A Conflict Between An Identifiable Federal Interest And Its Tort Obligations.

Boyle's rationale was centered on whether a tort duty conflicts with a significant federal interest to the extent that it should be preempted by federal common law. *See Boyle*, 487 U.S. at 508-512.[20] "Stripped to its essentials, the military contractor's defense under *Boyle* is to claim, 'The Government made me

[20] *Boyle* created the government contractor defense in a design defect case, *see Boyle*, 487 U.S. at 502, 512, 513, and the creation of the defense was a limited exercise of federal common law, *see id.* at 504 (the majority conceding that the Court was creating the defense as an exercise of "so-called 'federal common law.'"); *id.* at 517-18 (Brennan, J., dissenting) (arguing against the federal common law creation of the government contractor defense). The fact that the Supreme Court has never approved an expansion of the government contractor defense to failure to warn claims is important because of the limited federal common law rule-making authority of federal courts. *See Erie R. Co. v. Tompkins*, 304 U.S. 64, 78 (1938). This is particularly true when a federal common law rule has the effect of judicially expanding federal subject matter jurisdiction absent constitutional or statutory approval. *See Kokkonen*, 511 U.S. at 377 (noting that federal courts "possess only that power authorized by Constitution and statute . . . which is not to be expanded by judicial decree").

do it.'" *In re Joint E. & S. Dist. N.Y. Asbestos Litig.*, 897 F.2d 626, 632 (2d Cir. 1990). "*Boyle* displaces state law only when the Government, making a discretionary, safety-related military procurement decision ***contrary to the requirements of state law,*** incorporates this decision into a military contractor's contractual obligations, thereby limiting the contractor's ability to accommodate safety in a different fashion." *Id.* (emphasis added). Since Foster Wheeler never warned at all, it must prove that the Navy would not allow it warn. *See*, *e.g.*, *Glein v. Boeing Co.*, 2010 WL 2608284 (S.D. Ill. Jun. 25, 2010). As *Boyle* stated:

> Displacement will occur only where, as we have variously described, a "significant conflict" exists between **an identifiable** "federal policy or interest and the [operation] of state law," or the application of state law would "frustrate specific objectives" of federal legislation. . . . **But conflict there must be.**

Boyle, 487 U.S. at 507-08 (emphasis added). The plain language of the regulations discussed above demonstrates the federal government's policy and interest in ensuring (i) that manufacturers warn "all Navy users" and "consumers who may be exposed" to hazards in the use of their products, (JA 239, 302), (ii) that manufacturers warn of products that release carcinogenic dust with a TLV less than 25 mppcf — like asbestos, (JA 285, 288), (iii) that manufacturers warn in accordance with State and Federal law, (JA 229, 320), and (iv) that manufacturers' warnings were preeminent and any supplemental internal markings added by the Navy under NAVSUP Pub. 4500 were not permitted to cover up or deface the

manufacturers' warnings, (JA 303).[21] Because Foster Wheeler failed to factually demonstrate a conflict between this federal policy requiring warnings pursuant to State and Federal law and Foster Wheeler's State and Federal tort duties, Foster Wheeler cannot satisfy *Boyle*.

Judges in the Norfolk and Newport News divisions of the Eastern District of Virginia — for years one of the most active asbestos dockets in the United States —understood this fundamental point. In thousands of asbestos cases, judges such as Judge MacKenzie, Judge Clarke, Judge Kellum, Judge Smith, Judge Friedman and Judge Jackson, found that the government contractor defense was unavailable for failure to warn claims involving asbestos products supplied to the Navy because no defendant was able to demonstrate a conflict between a contractor's tort duty to warn and its obligations under its federal procurement contract. *See*, *e.g.*, *McCormick v. C.E. Thurston & Sons, Inc.*, 977 F. Supp. 400, 403 (E.D. Va. 1997) (noting that "in the thousands of asbestos cases that have preceded, the United States District Court for the Eastern District of Virginia has determined that the government contractor defense is not available in 'failure to

[21] As the court in *Ryan v. Dow Chemical Co.*, 781 F. Supp. 934, 950 (E.D.N.Y. 1992), observed, consideration of the purposes of both *Boyle* and § 1442 support remand here. Fundamentally, § 1442's purpose is to protect against threats to, or questioning of, federal policy. *Id.* But because DOD's policy and interest, as reflected in these regulations, is completely in harmony with having manufacturers warn of the hazards of asbestos in accordance with state and federal tort law, there is no chance of a threat to or questioning of federal policy in this case.

warn' cases."); *Epperson v. Northrop Grumman Sys. Corp.*, 2006 WL 90070, at *4 (E.D. Va. Jan. 11, 2006).[22]

Why did the Newport News and Norfolk divisions find the government contractor defense to be unavailable in asbestos failure to warn claims? Because from the time asbestos litigation started there in 1977 until *Boyle* was decided in 1988, many asbestos defendants in the Eastern District went to great lengths **to prove that they, in fact, did include warnings** on products sold to the Navy, and that the warnings on their products were adequate to apprise Navy service members and civil service workers, like Ripley, of the hazards of asbestos. For example, in 1987, GAF responded in answers to interrogatories that it "complied with Government specifications concerning product form, content, packaging and labeling for products" by "placing the following warning labels on packages of asbestos-containing industrial thermal insulation products" in 1964. (JA 481).

Judge MacKenzie's findings of fact in *Glover v. Johns-Manville* — an indemnity action by asbestos product manufacturers against the United States, which arose out of Norfolk Naval Shipyard, Ripley's work place — are particularly instructive.

[22] Appellees are unaware of any decision in the Eastern District extending this holding beyond the context of Navy asbestos product liability cases.

> [W]e make the following Findings of Fact:
>
> > (1) Prodded into action by the Selikoff report, Johns-Manville and Eagle-Picher, two of the corporations seeking indemnity in this suit, began placing warning labels on boxes of asbestos-containing thermal products. The labels cautioned that the long-term inhalation of asbestos "in excessive quantities ... may be harmful," and advised persons working with asbestos to wear respirators if in areas without "adequate ventilation control." Owens-Corning and Pittsburgh Corning, two other manufacturers involved in this suit, began labeling cartons of asbestos-containing products in 1968. All asbestos manufacturers adopted such labeling practices in 1972, goaded by OSHA.
>
> > . . . .
>
> > (7) Several manufacturers, including Eagle-Picher and Southern Asbestos, visited Naval installations to show their bonded asbestos products and to discuss the sale of nonasbestos-containing substitutes for those products required by government specifications.
>
> > (8) Naval officers Rosenwinkle and Barboo, upon invitation, visited Johns-Manville's New Jersey plant in 1969 to discuss possible substitute products for those containing asbestos and were shown some asbestos-free insulation materials, but nothing commercially feasible at that time.

Glover v. Johns-Manville Corp., 525 F. Supp. 894, 904-06 (E.D. Va. 1979) *aff'd*, 662 F.2d 225 (4th Cir. 1981). On the basis of the evidence adduced at trial and on summary judgment in *Glover* and other cases, the court found, and this Court affirmed in *Glover*, that the manufacturers were actively negligent in failing to adequately warn of the hazards of asbestos, and any negligence on the part of the Navy was only passive or secondary to the hazard created by the manufacturers'

initial failure to adequately warn of the hazard.[23] Thus, by the time *Boyle* came out, there was a decade of evidence — offered by similarly situated *defendants* in case after case — demonstrating that the asbestos manufacturing defendants, in fact, **did warn and that the Navy *never* did anything to prevent such warnings.**

When *Boyle* started percolating in the Eastern District and in this Court in the mid-1980s, some defendants attempted to change tactics to now claim that the Navy would not allow them to warn. But, by that time, the judges in the Eastern District knew this was not true due to all of the preceding evidence in prior cases of warnings actually included with military products. Thus by the time Judge Mackenzie decided the remand issue in *McCormick v. C.E. Thurston* in 1997 — two decades after his decision in *Glover* — he was able to accurately state that "in the thousands of asbestos cases that have preceded, the United States District Court for the Eastern District of Virginia has determined that the government contractor defense is not available in 'failure to warn' cases." *McCormick*, 977 F. Supp. at 403. Significantly, no defendant ever attempted to appeal this decision.

[23] If this Court was correct in *Glover* that the manufacturers were actively negligent in failing to warn, and the Navy was only passively or secondarily negligent, then this Court's opinion in *Glover* directly contradicts Foster Wheeler's claim that a government officer actively directed Foster Wheeler, or any other manufacturer, violate DOD's warning regulations. *See Glover v. Johns-Manville Corp.*, 662 F.2d 225, 229 (4th Cir. 1981).

Finally, to Ripley's knowledge, the Eastern District's disposition of this issue was not a holding that *Boyle* never applies to any failure to warn cases, it was a factual and legal holding that *Boyle* does not apply to *asbestos* failure to warn cases involving exposure on Navy ships and shipyards. This consistent holding was based on decades of evidence and experience demonstrating that the Navy never prevented asbestos warnings. Thus many of the Circuit Court of Appeals cases that Foster Wheeler relies upon regarding *Boyle's* applicability to failure to warn claims miss the mark because they do not involve the unique facts and federal regulations that apply to asbestos product liability cases arising from exposure on Navy ships and shipyards. *Cf. Kerstetter v. Pac. Scientific Co.*, 210 F.3d 431, 433-34 (5th Cir. 2000) (holding that *Boyle* applies to failure to warn claims in a **non-asbestos, adequacy of warning** case); *Tate v. Boeing Helicopters*, 140 F.3d 654 (6th Cir. 1998) (holding that *Boyle* applies to failure to warn claims in a **non-asbestos, adequacy of warning** case); *Oliver v. Oshkosh Truck Corp.*, 96 F.3d 992 (7th Cir. 1996) (holding that *Boyle* applies to failure to warn claims in a **non-asbestos, adequacy of warning** case).

Accordingly, this Court should affirm the district court's remand order.

B. Foster Wheeler Failed To satisfy Any Of The Three Elements Of The *Boyle* Defense.

The government contractor defense set forth in *Boyle* requires proof of the following elements:

> (1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; **and** (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States.

Boyle, 487 U.S. at 512 (emphasis added).[24] Foster Wheeler must satisfy all three conjunctive elements to be entitled to the defense.

(1) Foster Wheeler Failed to Proffer a Single Reasonably Precise Specification Limiting Foster Wheeler's Unfettered Ability to Warn.

Foster Wheeler must prove that "the United States approved reasonably precise specifications" prohibiting warnings. "*Boyle* makes clear that the

[24] Some courts have modified this test when dealing with warning claims. For instance *Tate v. Boeing Helicopters*, 55 F.3d 1150, 1157 (6th Cir. 1995), modified the *Boyle* elements as follows:

> (1) the United States exercised its discretion and approved the warnings, if any; (2) the contractor provided warnings that conformed to the approved warnings; and (3) the contractor warned the United States of the dangers in the equipment's use about which the contractor knew, but the United States did not.

Id. However this test presumes that the Navy procurement officer had discretion to consider manufacturers' warnings and, as more fully discussed in Section IV, *Tate* and most of the cases using this test, involved the *adequacy* of warnings that were actually proposed and approved — not the complete failure to warn at all.

requirements of 'reasonably precise specifications' and conformity with them refer to the particular feature of the product claimed to be defective." *Bailey v. McDonnell Douglas Corp.*, 989 F.2d 794, 799 (5th Cir. 1993). The "particular feature" in this case is Foster Wheeler's complete failure to warn. Foster Wheeler must, therefore, show that its failure to warn resulted from a discretionary decision by the Navy, assuming a Navy procurement officer had authority to make such a decision in the face of DOD's warning regulations.

Significantly, *Boyle* refused to base the defense on *Feres v. United States*, 340 U.S. 135 (1950). *See Boyle*, 487 U.S. at 509-510. According to *Boyle*, basing the defense on *Feres* would have produced results that were, in part, too broad because it would afford immunity for any service-related tort claim against a manufacturer, regardless whether there was a conflict between the terms of the contract and the manufacturer's state or federal tort obligations. *Boyle* rejected this construct because the defense would apply when the Navy dictated particular design features but a tort duty required a safety feature **not specified by, nor contrary to,** the Navy's design specifications. *Id*.

Yet Foster Wheeler, and many of the opinions it relies upon, attempts to steer the defense back to a *Feres* mooring by claiming that mere approval of the *absence* of a warning on a product or in a technical manual is nevertheless proof that the Navy "specified" its omission. This, they say, is necessary because of the

government contracting relationship and the control the government may have exercised over *design* specifications — even where a particular warning is not specified by, nor contrary to, the contract. This argument would grant immunity to Foster Wheeler and every asbestos product supplier, whether the warning was specified or omitted, and whether the warning conflicted with tort obligations or not. In effect, this argument rewrites *Boyle* to dispense with the most central aspect of the opinion — that "conflict there must be." *Boyle*, 487 U.S. at 508. This is not the defense approved by *Boyle*.

Foster Wheeler, moreover, claims that government involvement in Foster Wheeler's contracts was more extensive due to the complexity of the boilers, and they ask this Court to infer that this involvement in *design* specifications also means dictation of warnings.[25] But "[r]easonably precise specifications for one aspect of a large project do not create an umbrella of protection for an entire project. Instead, the requirement of reasonably precise specifications must be met by the specific feature at issue in the claim." *In re Katrina Canal Breaches Litig.*, 620 F.3d 455, 461 (5th Cir. 2010). To be sure, *Boyle* involved a contract for a helicopter, which is at least as complex as a boiler, and yet *Boyle* still required

[25] Foster Wheeler's boilers do not warrant different treatment from the asbestos cement, asbestos block, asbestos gaskets, and asbestos packing involved in the cases in the 1980s and 90s, because the asbestos components of Foster Wheeler's boilers that gave rise to the hazard were the same asbestos block, cement, and gaskets at issue in these earlier cases.

demonstration of reasonably precise specification dictating the *precise* defect at issue—an outward-opening, escape hatch. Similarly a contract to procure an F-4 fighter jet is complex but this did not prevent the court *Bailey* from finding the government contractor defense unavailable for the "particular feature of the product claimed to be defective" in that case. *Bailey*, 989 F.2d at 799-801 (noting that because there was no evidence that a canister's metallurgic content was specified by the military, despite overall design control of the contract, the *Boyle* defense was unavailable); *see also In re Hawaii Fed. Asbestos Cases*, 960 F.2d 806, 813 (9th Cir. 1992) (finding that the defendants "failed to allege, let alone establish, that in making their decisions regarding warnings they were acting in compliance with 'reasonably precise specifications' imposed on them by the United States."). And in *Trevino v. Gen. Dynamics Corp.*, 865 F.2d 1474, 1486 (5th Cir. 1989), the contract was for an entire submarine, but the court noted:

> If the government approved imprecise or general guidelines, then discretion over important design choices would be left to the government contractor. . . . *Boyle* noted that "[t]he first two of these [*Boyle* elements] assure that the suit is within the area where the policy of the 'discretionary function' would be frustrated — i.e., they assure that the design feature in question was considered by a Government officer, and not merely by the contractor itself." 108 S.Ct. at 2518.7 . . . As we noted in Bynum, the purpose of the test is to deny the defense to a government contractor "that is itself ultimately responsible for the design defect." 770 F.2d at 574.

Trevino, 865 F.2d at 1481.[26] In short, mere rubber stamping of a contractor's decision not to warn by absent-mindedly approving an omission that was never brought to the Navy's attention is insufficient. *Trevino*, 865 F.2d at 1486.

It is striking that a manufacturer who contracted with the government for at least 30 years before Ripley was exposed has been unable to come up with a single actual contract, government standard, or specification to proffer to the Court — i.e., a single "reasonably precise specification" — that demonstrates a federal decision to prohibit, or even limit, Foster Wheeler from warning. As in *Holdren,* Foster Wheeler has

> submitted no evidence that the Navy expressly prohibited asbestos warnings by manufacturers; no evidence that they ever attempted to warn about asbestos on products destined for the Navy; no evidence that the Navy ever rejected any other manufacturer's proposed asbestos warning; and no evidence that defendants warned of asbestos on other, non-military equipment they produced during the same period, by contrast to the equipment they supplied to the Navy. Finally, they offer no persuasive evidence of an overall Navy-wide policy that would have conflicted with manufacturer asbestos warnings.

Holdren, 614 F. Supp. 2d at 137. Without such factual evidence, Foster Wheeler's defense "rests entirely on an untested hypothetical: If they had made such a

[26] *See also Butler v. Ingalls Shipbuilding, Inc.*, 89 F.3d 582, 586 (9th Cir. 1996) (noting that the "defense is inapplicable to a failure to warn claim in the absence of evidence that in making its decision whether to provide a warning . . . Ingalls was 'acting in compliance with "reasonably precise specifications" imposed on [it] by the United States.'").

proposal, the Navy *would have* refused that recommendation." *Id.* An untested, post hoc hypothetical is not a reasonably precise specification.

Because they have no factual evidence, Foster Wheeler relies on boiler plate affidavits from paid affiants who merely opine that the government exercised control over *design* specifications, and that *if* the manufacturers had recommended warning language, the Navy *would have* refused that recommendation. This is nothing more than post-hoc speculation. *See Holdren*, 614 F. Supp. 2d at 137. But, as demonstrated above, Foster Wheeler's own affiants have admitted they have no foundation for their opinions because they have no factual knowledge of the pertinent regulations and specifications, and they have no personal experience regarding the acceptance, rejection or control of warnings on asbestos containing products. In fact, Lehman's affidavit fails to cite a single specification. And, when confronted with DOD's warning regulations, Lehman recanted and deferred to their plain language in admitting that manufacturers actually did have discretion to warn of the hazards of asbestos. Likewise, the only specification Schroppe cites is the Boiler specification, MIL-B-18381, which, as discussed above, told Foster Wheeler to mark the "interior packages and exterior shipping containers" for its boilers and their associated parts "in accordance with the contractor's commercial practice," (JA 218, ¶ 5.1.1.3), and told Foster Wheeler to mark its onboard repair parts in accordance with MIL-STD-129, (JA 218, ¶ 5.1.2).

The reason Foster Wheeler fails to identify a single specification is that it knows that, contrary to its litigation position, every federal labeling standard from at least the 1950s forward —including MIL-STD-129, MIL-STD-1314, Fed. Std. No. 313, MIL-B-18381 and the procurement contract, itself — told Foster Wheeler to provide warnings for military and civil service "consumers" and "users" of its products. And MIL-STD-755 and NAVSUP Pub. 4500 held manufacturers' warnings to be preeminent over any supplemental warning later added by the military. Thus because Foster Wheeler has failed to cite a single "reasonably precise specification" limiting its unfettered ability to warn in accordance with state and federal tort law, it cannot prove the first element of *Boyle*.

(2) Foster Wheeler Failed to Conform to the Government's Specifications.

Likewise, Foster Wheeler cannot, as a matter of law, prove *Boyle's* second prong, which required Foster Wheeler to conform to the government's specifications. As demonstrated above, every single DOD regulation, specification and policy letter that deals with warnings, as well as the contract, itself, told Foster Wheeler to warn. MIL-STD-129 told Foster Wheeler to include warnings on "[a]ll package units of hazardous chemicals to be ultimately issued to the consumer who may be exposed to such chemicals under conditions of ordinary use," and it directed Foster Wheeler to provide those warnings "in accordance with the Manufacturing Chemists Association's Manual L-1," which required warnings for

carcinogenic dust pursuant to State and Federal law. (JA 239). MIL-STD-1341 and Fed. Std. 313 required manufacturers to warn of all hazards in the use of their products, incorporated by reference MIL-STD-129, and expressly stated that hazardous materials that required a warning included materials that had "a threshold limit value . . . below 25 mppcf for dusts," such as asbestos. (JA 285). MIL-B-18381B required Foster Wheeler to mark the "interior packages and exterior shipping containers in accordance with the contractor's commercial practice" and required Foster Wheeler to mark its onboard repair parts "in accordance with Standard MIL-STD-129." (JA 218). And the 1956 SECNAV letter recognized that "labels to be affixed by the manufacturer" are "governed by State and Federal laws and regulations" and that "most major manufacturers of chemicals abide by the 'Warning Labels Guide' published by the Manufacturing Chemists Association." (JA 320).

Despite these clear regulations, Foster Wheeler concedes that it never included any asbestos warning on any of its boilers, their associated components or their onboard spare parts prior to or during Ripley's exposure period. Consequently, since Foster Wheeler concedes its products did not conform to these specifications, it cannot satisfy *Boyle's* second requirement as a matter of law.

(3) Foster Wheeler Failed to Satisfy *Boyle's* Third Element.

Finally, this Court need not reach *Boyle's* third element if it finds Foster Wheeler failed on either of the first two elements of *Boyle's* conjunctive test. Even so, Foster Wheeler has failed to offer sufficient evidence to make a colorable showing on *Boyle's* third element. Under this element, the contractor must show that it "warned the United States about the dangers **in the use of the equipment** that were known to the supplier but not to the United States." *Boyle*, 487 U.S. at 512 (emphasis added). Foster Wheeler concedes it never warned the United States about the asbestos-related dangers in the use of its equipment, at all. To be sure, assuming, *arguendo*, that a Navy procurement officer had discretionary decision-making authority on this issue in the face of DOD's consistent warning regulations, Foster Wheeler's failure to even suggest an asbestos warning to the Navy deprived the Navy of the opportunity to make a discretionary decision about the inclusion of a warning in the first place.

Instead, in *post hoc* fashion, Foster Wheeler submits Betts' affidavit to claim that the Navy had more knowledge about asbestos than Foster Wheeler and that suggesting a warning would have been futile. But this is speculation because there is no factual evidence in the record for Betts to arrive at this conclusion. Betts has never investigated what Foster Wheeler knew and, therefore, has no factual basis to compare Foster Wheeler's knowledge to the Navy's knowledge. Additionally,

Betts has no knowledge, and never discusses, the federal regulations requiring Foster Wheeler to be knowledgeable and to warn of the hazards of asbestos. This hindsight opinion by a medical doctor thirty years after the fact validates *Boyle's* concern that if the government contractor defense was applied too broadly, it "would create some incentive for the manufacturer to withhold knowledge of risks, since conveying that knowledge might disrupt the contract but withholding it would produce no liability." *Boyle*, 487 U.S. at 512-13. It was for this very reason that *Boyle* formulated its third prong — to prevent the Court's "effort to protect discretionary functions [from] perversely imped[ing] them by cutting off information highly relevant to the discretionary decision." *Id.*[27] Thus, what Foster Wheeler calls futile in hindsight, *Boyle* calls "highly relevant."

Moreover, *Boyle's* third prong does not concern general knowledge about the hazards of a carcinogen; it concerns "dangers **in the use** of the equipment" supplied by Foster Wheeler. *Boyle*, 487 U.S. at 512 (emphasis added). Betts admits that the Navy's knowledge of asbestos came from general, publicly available

[27] Significantly, *In re Joint E. & S. Dist. New York Asbestos Litig.*, 897 F.2d 626, 632 (2d Cir. 1990), noted that this "requirement that a contractor inform the Government of the dangers attending to the equipment it proposes to supply is geared to ensure that the Government makes its decision to contract for that particular equipment with benefit of full knowledge of all hazards." The Second Circuit contrasted this objective with the objective of tort law duties to warn, which seek to "help[] those who use or otherwise come into contact with a product to protect their own safety." *Id.* "Apart from their common use of the word 'warn,' the two duties bear absolutely no similarity to one another." *Id.*

information. This general information, however, does not specifically relate to the "use of the equipment" supplied by Foster Wheeler, and it does not include any internal testing that Foster Wheeler performed, or should have performed, on its finished products. For instance, general knowledge about hazards of asbestos does not necessarily communicate the deteriorating effect of boiler heat and pressure on an otherwise innocuous-looking asbestos boiler handhole or manhole gasket.

Foster Wheeler is held to the knowledge and skill of an expert, and it is "charged with superior knowledge" of its "products and their components, and how injury may result from foreseeable use." *Borel v. Fibreboard*, 493 F.2d 1076, 1089 (5th Cir. 1973); 2 Dooley, Modern Tort Law § 32.10 (1983); Restatement (Second) of Torts, § 395, cmt. g (1965) ("[A] manufacturer … should exercise reasonable care to ascertain not only the material out of which the part is made but also the plan under which it is made. He must have sufficient technical knowledge to form a reasonably accurate judgment as to whether a part made under such a plan and of such material is or is not such as to secure a safe finished product.").[28] Whatever the Navy may have known about the hazards of asbestos, it was not charged, by law, with the expert knowledge that Foster Wheeler, as a manufacturer, should have had about the use of its own finished products. To be

[28] *Foster v. Am. Home Prods.*, 29 F.3d 165, 170 (4th Cir. 1994); *George v. Celotex Corp.*, 914 F.2d 26, 28 (2d Cir. 1990); *Karjala v. Johns Manville*, 523 F.2d 155, 159 (8th Cir. 1975).

sure, the fact that Ripley — a civil service boilermaker at a Navy shipyard — and countless others employed there had no knowledge of the hazards of asbestos and was not protected against these hazards in the use of Foster Wheeler's boilers runs contrary to Foster Wheeler's litigation narrative that the Navy knew everything. Because Foster Wheeler concedes it never even attempted to apprise the Navy about asbestos hazards in the use of its boilers and associated components, Foster Wheeler cannot satisfy this element of the *Boyle* test.

In sum, Foster Wheeler fails to state a colorable claim under any of *Boyle's* three elements. Accordingly, this Court should affirm the district court's remand decision.

IV. The Cases Foster Wheeler Relies On Are Distinguishable.

The cases Foster Wheeler relies upon do not require this Court to reverse the district court's remand order. First, to Ripley's knowledge, none of the opinions that Foster Wheeler cites considered the dispositive issue whether a Navy procurement officer would be acting under "color of office" by requiring Foster Wheeler to violate the government's consistent warning regulations, MIL-STD-129, MIL-STD 1341 and Fed Std. 313. Though some of the cases discuss the causal nexus test, they analyze only whether the federal officer had sufficiently "'direct and detailed control over the defendant'" for there to be a causal nexus. *McGee v. Arkel Int'l, LLC*, 716 F. Supp. 2d 572, 575 (S.D. Tex. 2009). The

underlying question whether a federal officer had discretion to exercise such control in the first place was either not raised by the parties or not discussed by the opinions.

Next, as noted earlier, many of the cases that Foster Wheeler relies upon did not involve asbestos claims at all or involved the adequacy of warnings rather than the outright failure to warn at issue in this case. *See*, *e.g.*, *Tate v. Boeing Helicopters*, 921 F. Supp. 1562, 1566-67 (W.D. Ky. 1996) (noting that Boeing suggested, and the Army adopted verbatim, warnings on the specific hazard); *Kerstetter*, 210 F.3d at 438 (noting that the Navy actually "approved, changed and edited warnings in the T34C NATOPS Flight Manual."); *Oliver*, 96 F.3d at 1004 (noting that the "undisputed facts of record show[ed] that . . . the contractor provided those warnings required by the government" and that "drawings in evidence showed "several different views of the MK-48 and depict[ed] the locations of warnings"). Because these cases do not involve asbestos or carcinogenic materials at all, they do not take into account the DOD and federal warning standards discussed in this brief or whether those standards conflict with state and federal tort law. Moreover, because they involve the adequacy of warnings that were actually given, they do not analyze whether a federal officer would have had discretion to violate the federal warning regulations by preventing a warning altogether.

Additionally, most of the non-asbestos cases cited in Foster Wheeler's brief did *not* rely solely on factually unsupported affidavits referring vaguely to unspecified regulations and standards. They relied on voluminous records that included the actual drawings, contracts, specifications and standards directly at issue in the case. *See*, *e.g.*, *Kerstetter*, 210 F.3d at 437; *Tate*, 140 F.3d at 657; *Oliver*, 96 F.3d at 998. In contrast, few, if any, of the *asbestos* cases cited with approval in Foster Wheeler's brief considered all of the federal regulations discussed in this Opposition. And, to Ripley's knowledge, not one of the asbestos cases had before them an actual Purchase Order for the specific equipment on one of the specific ships the plaintiff worked on.

Thus most of the asbestos cases Foster Wheeler relies on gave full credit to the defendant's factually unsupported affidavits even in the absence of the actual contracts and specifications and did not require the defendant to "bear[] the burden of proving by a preponderance of the evidence that each of the requirements for subject-matter jurisdiction has been met." *Leite*, 749 F.3d at 1121; *see*, *e.g.*, *Cuomo v. Crane Co.*, 771 F.3d 113, 117 (2d Cir. 2014); *Ruppel v. CBS Corp.*, 701 F.3d 1176, 1184 (7th Cir. 2012). Thus they violated the guidance of the Supreme Court in *Hertz*, which rejected the suggestion that a factually unsupported conclusory sworn statement — or even an SEC 10K required to be filed under oath, *see* 15

U.S.C.A. § 7241 — was sufficient to rebut a factual attack.[29] Moreover, though *Leite* identified the proper standard of review for a factual challenge, the court failed to apply this standard of review to the factually unsupported and conclusory affidavits of the defendants at issue in the case.

The contradiction between the factually unsupported personal *opinions* of Schroppe and Lehman, and explicit federal regulations requiring Foster Wheeler to warn in accordance with State and Federal law does **not** create a genuine dispute of material fact requiring resolution in federal forum. This is a conclusion that has already been unanimously resolved by the trial judges of the Eastern District of Virginia — a federal forum — who have actually tried the facts and heard the evidence in thousands of asbestos product liability cases involving a huge variety of shipboard asbestos containing products, including the very products that are on every Foster Wheeler boiler (e.g., asbestos block insulation, asbestos cement, and asbestos gaskets).

When it came to warnings, Foster Wheeler was told to do nothing more than to comply with State and Federal law, just as it should have complied with the

[29] *See also In re Commonwealth's Motion to Appoint Counsel Against or Directed to Defender Ass'n of Philadelphia*, 790 F.3d 457, 466 (3d Cir. 2015), *as amended* (June 16, 2015) (noting that federal officer removal may be subject to facial or factual attack); *Leite v. Crane Co.*, 749 F.3d 1117, 1121-1123 (9th Cir. 2014) (discussing the required analysis when there is a factual attack).

same State and Federal law in its commercial sales. There is no conflict here. This Court should affirm the district court's remand order.

CONCLUSION

WHEREFORE, for the foregoing reasons, this Court should affirm the district court's order remanding this case to the Circuit Court for the City of Newport News, Virginia.

Respectfully submitted,

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STATEMENT ON ORAL ARGUMENT

Plaintiff Deborah H. Ripley, individually and as Administrator of the Estate of Bernard W. Ripley, deceased, believes that oral argument would assist the Court in understanding the jurisdictional issues presented in this appeal. *See* Fed. R. App. P. 34(a)(1); 4th Cir. L.R. 34(a).

ADDENDUM

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THE NATIONAL ARCHIVES
LITTERA SCRIPTA MANET

FEDERAL REGISTER

OF THE UNITED STATES 1934

VOLUME 25 NUMBER 251

Washington, Wednesday, December 28, 1960

Title 41—PUBLIC CONTRACTS

Chapter 50—Division of Public Contracts, Department of Labor

PART 50–204—SAFETY AND HEALTH STANDARDS FOR FEDERAL SUPPLY CONTRACTS

The Walsh-Healey Public Contracts Act (49 Stat. 2036, 41 U.S.C. 35 et seq.) requires that contracts entered into by any agency of the United States for the manufacture or furnishing of materials, supplies, articles, and equipment in any amount exceeding $10,000 must contain, among other provisions, a stipulation that no "part of such contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of said contract".

A single standard of safety and health conditions is thus required for all work subject to the Act. An objective description of the working conditions encountered, established by a preponderance of the reliable, probative, and substantial evidence, is, of course, essential to the administrative application of this standard. A second question which must be resolved is whether conditions of the type described are "unsanitary or hazardous or dangerous to the health or safety of employees". This is a question of fact. For assistance in its resolution, the act provides a special rule of evidence: "Compliance with the safety, sanitary, and factory inspection laws of the State in which the work or part thereof is to be performed shall be prima-facie evidence of compliance with this subsection."

The statutory provision concerning "prima-facie evidence" does not purport to take the place of the uniform national standard. It has application only to issues which require evidence. In the absence of opposing evidence, it authorizes resolution of such issues compatibly with the prima-facie evidence. Also, rules concerning prima-facie evidence obviously have no application in situations where evidence is not required. Where, therefore, the common experience of men is all that is needed to lead a rational and prudent person to the conclusion that certain conditions of employment are incompatible with the safety and health of employees, no defense is provided by the statutory "prima-facie evidence" rule merely because such conditions may not be specifically prohibited in the State safety, sanitary, and factory inspection laws, or the regulations hereby proposed. Neither is it necessary to call a witness to testify concerning the hazardous nature of such conditions.

The statutory rule of "prima-facie evidence" was not designed to deter the Secretary of Labor from diligent inquiry even beyond the safety, sanitary, and factory inspection laws of the several states to discover more directly what are the "working conditions which are unsanitary or habardous or dangerous to the health and safety of employees." This is demonstrated by the provisions in sections 4 and 5 of the Act, directing the Secretary to administer it and authorizing him to appoint experts, make investigations, hold hearings, compel the production of evidence, and make findings of fact. Accordingly, following enactment of the Act, experts were appointed and their testimony used in the administrative enforcement proceedings conducted under section 5 of the Act. Differences of opinion over what conditions of employment fail to meet the statutory standard have thus been resolved with the assistance of expert testimony on a case-by-case basis in nearly a quarter of a century of hearings and findings under the Act. These have been conducted in accordance with sections 6, 7, and 8 of the Administrative Procedure Act since its enactment.

The hazardous characteristic of a particular working condition, is, of course, the likelihood that it will cause illness, or injury in the employment situation. This characteristic is not always immediately apparent. Causative analysis of injury frequency rates in industry has shed much light on the importance of certain precautions not fully appreciated by those responsible for the operation of industrial establishments. The Department's discovery and evaluation of these hazards and the development of the regulations herein promulgated has relied quite extensively on the outstanding contributions of the private and public organizations which are generally accepted as preeminent in this field. Among these are the publications of American Standards Association, Inc., American Society of Mechanical Engineers, National Fire Protection Association, National Board of Fire Underwriters, the Public Health Service of the United States Department of Health, Education, and Welfare, the Bureau of Mines of the United States Department of the Interior, and the Atomic Energy Commission.

Section 7(d) of the Administrative Procedure Act recognizes that, even in the most formal type of administrative adjudications, agency decision may rest on "official notice of a material fact not appearing in the evidence in the record," but it requires that "any party shall on timely request be afforded an opportunity to show the contrary". The Attorney General's Manual on the Administrative Procedure Act points out (p. 80) that this authority "extends properly to all matters as to which the agency by reason of its functions is presumed to be expert, such as technical or scientific facts within its specialized knowledge. Cf. H.R. Rep. p. 38 (Sen. Doc. p. 272). * * * The matters thus noticed become a part of the record and, unless successfully controverted, furnish the same basis for findings of fact as does 'evidence' in the usual sense."

The hazardous characteristics of many working conditions, thus being facts of a "technical or scientific" nature, and having come within the Department's "specialized knowledge" by reason of its experience, proof of them in administrative adjudications by official notice is appropriate. The facts declared in these regulations are soundly based in the experience of the Department and in the experience of outstanding public and private experts in their specialized divisions of the field of health and safety engineering. The regulations herewith promulgated extend, however, into areas in which reasonable men may differ. Any party to an administrative adjudication who is adversely affected by them will, therefore, have the opportunity to contest them by presenting the issue in

his responsive pleading and introducing such evidence as he will be able to muster for consideration at his hearing.

Publication of standards which will underline the enforcement policy of the agency which administers the Walsh-Healey Public Contracts Act will promote observance of the safety and health requirements by curtailing uncertainty on the part of those whose duty it is to comply. Such publication will permit the administrative adjudication of many safety and health cases without the necessity of calling an expert witness to the place of hearing to testify to the hazardous nature of the working conditions denounced in the regulations. Except in cases where a party gives notice of intent to challenge the safety standards expressed in the regulation at hearing, as provided in the regulations herein promulgated, this element of possible controversy, and occasion of possible variety in decision, will be eliminated. These are the considerations which prompt this use of the authority expressed in section 4 of the Walsh-Healey Public Contracts Act to make "such rules and regulations as may be necessary to carry out the provisions of this Act."

Radiation standards for inclusion in the regulations herein promulgated as amendments are currently being drafted. They will apply the recommendations of the Federal Radiation Council approved by the President for the guidance of federal agencies May 13, 1960 (25 F.R. 4402).

As these regulations are rules of agency procedure or practice delineating facts which will be officially noticed in enforcement proceedings under section 5 of the Act, notice of proposed rule making and public proceedings in their adoption are not required by subsections 4 (a) and (b) of the Administrative Procedure Act.

In accordance with section 4 of the Administrative Procedure Act (60 Stat. 238, 5 U.S.C. 1003), therefore, and under the authority of section 4 of the Walsh-Healey Public Contracts Act (49 Stat. 2038, 41 U.S.C. 38), effective 30 days after publication in the FEDERAL REGISTER, a new Part 50–204—Safety and Health Standards for Federal Supply Contracts, is hereby added to 41 CFR, Chapter 50.

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50–204.172 Keys, set screws, and other projections.
50–204.173 Collars.
50–204.174 Couplings.

GUARD STANDARDS FOR MECHANICAL POWER TRANSMISSION

50–204.179 Materials.
50–204.180 Disk, shield, and "U" guards.
50–204.181 Approved materials.
50–204.182 Wood guards.
50–204.183 Guards for horizontal overhead belts.
50–204.184 Guards for horizontal overhead rope and chain drives.
50–204.185 Guard rails and toe boards.

MISCELLANEOUS MACHINE GUARDING

50–204.190 Lathes and automatic screw machines.
50–204.191 Drill presses.
50–204.192 Planers and shapers (metal).
50–204.193 Shears.
50–204.194 Guillotine cutters, power-driven.
50–204.195 Power presses.
50–204.196 Foot and hand presses.
50–204.197 Other power-press safety devices.
50–204.198 Platen presses.
50–204.199 Abrasive wheels.
50–204.200 Revolving drums and cylinders.
50–204.201 Fans.

WOODWORKING MACHINERY

50–204.208 Circular table saws.
50–204.209 Swing and sliding cut-off saws.
50–204.210 Inverted swing cut-off saws (jump saws).
50–204.211 Radial saws.

AUTHORITY: §§ 50-204.1 to 50-204.300 issued under sec. 4, 49 Stat. 2038, 41 U.S.C. 38. Interpret or apply sec. 1, 49 Stat. 2036, 41 U.S.C. 36.

§ 50-204.1 Scope and application.

(a) The Walsh-Healey Public Contracts Act (49 Stat. 2036, 41 U.S.C. 35 et seq.) requires that contracts entered into by any agency of the United States for the manufacture or furnishing of materials, supplies, articles, and equipment in any amount exceeding $10,000 must contain, among other provisions, a stipulation that "No part of such contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of the contract." This Part 50-204 of this chapter expresses certain minimum safety and health standards which will be applied in the administration and enforcement of the Act, including proceedings under its section 5 and 41 CFR Part 50-203, Subpart A, to determine whether particular contracts subject to the Act are being, or have been, performed in compliance with its safety and health requirements.

(b) In all administrative, enforcement, and investigative proceedings conducted by the United States Department of Labor under the Act, official notice will be taken of the fact that failure to comply with the requirements expressed in this Part 50-204 of this chapter results in working conditions which are "unsanitary or hazardous to employees" within the meaning of section 1(c) of the Act, and contracts incorporating the stipulation it requires.

(c) In formal enforcement proceedings under section 5 of the Act, respondents will be permitted to demonstrate, by reliable, substantial, and probative evidence, that their failure to comply with the requirements expressed in Part 50-204 of this chapter did not result in working conditions which were "unsanitary or hazardous or dangerous to employees," but only if the answer to the complaint, filed under 41 CFR 50-203.3, makes express allegation to that effect, identifying the particular code unit challenged and setting out the factual basis for the challenge. In the event such issue is drawn, and reliable, substantial, and probative evidence is introduced in support of the challenge, the pertinent portions of the publications of the American Standards Association, Inc., American Society of Mechanical Engineers, National Fire Protection Association, National Board of Fire Underwriters, the Public Health Service of the United States Department of Health, Education, and Welfare, the Bureau of Mines of the United States Department of the Interior, and the Atomic Energy Commission will be considered, together with any other evidence that may be adduced in support of the regulation, on the issue whether the preponderance of the reliable, substantial, and probative evidence supports a finding that the working conditions prohibited in the regulation are unsanitary or hazardous or dangerous to the health and safety of employees.

(d) The standards expressed in Part 50-204 of this chapter are for application to ordinary employment situations, and do not preclude proof or recognition of the necessity of higher standards for employment situations of extraordinary hazard. Neither do the standards expressed in this Part 50-204 of this chapter purport to describe all of the working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees. Other working conditions may be found to be unsanitary or hazardous or dangerous to the health and safety of employees on evidence to that effect, or without such evidence, where such unsanitary or hazardous or dangerous characteristic should be apparent to a rational and prudent person of common experience.

(e) Compliance with the standards expressed in Part 50-204 of this chapter will not relieve anyone from any obligation to comply with any more strict standard stemming from any other source whatsoever.

BUILDINGS AND APPURTENANCES

§ 50-204.2 Buildings.

Buildings and all appurtenances thereto, including bridges, towers, balconies, runways, and platforms, shall be structurally safe to prevent collapse.

§ 50-204.3 Floors.

(a) No floor or platform shall be so loaded as to have a factor of safety of less than four. That is, the weight placed upon a floor or platform shall not exceed one-fourth of the breaking strength of the platform or floor.

(b) Floors, other than those resting directly on solid ground, when used for heavy storage shall be clearly posted to show maximum safe floor loads.

(c) All floor surfaces shall be kept clean and dry and maintained in a smooth (free from holes or projections that might cause tripping and reasonably nonslippery) condition.

(d) Where the type of operation necessitates working on floor areas which would be otherwise wet or slippery, such areas shall be covered with mats, grates, cleats, or other high friction floor coverings.

(e) Safe means of access, suited to conditions, shall be provided to every overhead point to which employees are called upon to go in connection with their employment.

§ 50-204.4 Building egress.

(a) *Exits.* Not less than two means of egress (other than ladders or elevators) as remote from each other as possible, shall be provided on every floor, including basements and cellars of every building or section where persons are employed. On the street floor at least one of these shall be a door leading directly outside the building, and the other may be a door leading outside the building, or a standard horizontal exit. On upper floors and basements, one exit shall be an enclosed stairway or smokeproof tower and the other or others may be inside stairways or horizontal exits or fire escape stairs.

(b) *Exit doors.* Doors shall swing in the direction of exit and open in such a manner as not to obstruct passageways or corridors used as ways of egress. No chairs or seats, fixtures, chutes, materials, or equipment shall block or in any way jeopardize the use of ways and means provided for egress. All exit doors and windows used as means of egress in case of fire or panic shall be so arranged as always to be opened readily from the inside. Locks on doors and windows, if provided, shall not require the use of a key to open.

(c) *Exit signs.* All exits or means of egress shall be provided with a sign having on it the word "EXIT" which shall be in letters at least five inches in height and plainly indicate to persons within the building the location of such egress.

Directional signs to the means of egress should be provided where necessary.

STAIRWAYS OR STEPS

§ 50-204.9 Stair width of treads and height of risers.

There shall be no variation in the width of treads and height of risers in any flight. Where variation in heights of risers in different flights is necessary on account of varying story heights, such variations shall not exceed 3/16 inch. All treads shall be at least 10 inches wide.

§ 50-204.10 Stairway maintenance.

Every stairway or step shall be maintained in good repair, free from protruding bolts, screws, nails, dirt, or slippery conditions, and no storage shall be permitted on stairways.

§ 50-204.11 Treads.

Treads shall be renewed when the surface, including the nosing, shows wear to the extent of ¼ inch or more. All metal treads shall have a surface which will reasonably prevent slipping.

§ 50-204.12 Stairway railings and handrails.

Every flight of stairs having four or more risers shall be equipped with a stair railing or handrails constructed to conform to the requirements of sections 50-204.28 and 50-204.29 under the following conditions:

(a) On stairways of width less than 44 inches and having both sides enclosed—at least one handrail on the right side descending.

(b) On stairways of width less than 44 inches and having one side open—at least one stair railing that shall be on the open side.

(c) On stairways of width less than 44 inches and having both sides open—one stair railing on each side.

(d) On stairways of width 44 inches or more but less than 88 inches—one handrail on each enclosed side and one stair railing on each open side.

(e) On stairways 88 inches or more in width—one handrail on each enclosed side, one stair railing on each open side and one intermediate stair railing located approximately midway of the width.

(f) Winding stairs shall be equipped with a handrail so offset as to prevent walking on any portions of the treads having width less than 6 inches.

GUARDING OF FLOOR OPENINGS AND FLOOR HOLES

§ 50-204.17 Stairway floor openings.

A railing constructed to conform to the requirements of sections 50-204.28 and 50-204.29 shall be provided on all exposed sides of stairway floor openings (except at entrance to stairway). Standard toe boards shall be provided also, except in stair towers.

§ 50-204.18 Ladderway floor openings.

Every ladderway floor opening shall be guarded by a standard railing with standard toe board on all exposed sides, except at entrance to opening.

§ 50-204.19 Hatchway and chute floor.

Every hatchway and chute floor opening shall be guarded either by:

(a) Hinged floor-opening cover of standard strength and construction equipped with railing constructed in accordance with sections 50-204.27 and 50-204.29 so as to leave no exposed side. When the opening is not in use the cover shall be closed.

(b) A removable railing with toe boards on not more than two sides of the opening and permanent railings with toe boards on all other exposed sides both constructed in accordance with sections 50-204.27 and 50-204.29. The removable railings shall be kept in place when the opening is not in use.

(c) Where operating conditions necessitate the feeding of material into any hatchway or chute opening from all sides, the guarding requirements will be satisfied if bars, chains, or other adequate protection is provided to prevent a person from falling through the opening.

§ 50-204.20 Floor hole.

Every floor hole except those described in sections 50-204.17, 50-204.18, 50-204.19 shall be guarded either by:

(a) A railing constructed in conformance with the requirement in sections 50-204.27 and 50-204.29 with standard toe board on all exposed sides; or

(b) A floor opening cover, hinged in place. While the cover is open, floor holes shall be constantly attended by someone or shall be protected by a portable enclosing railing.

GUARDING OF OPEN-SIDED FLOORS, PLATFORMS AND RUNWAYS

§ 50-204.25 Open-sided floor and platform.

(a) Every open-sided floor shall be guarded by a railing constructed in accordance with sections 50-204.27 and 50-204.29 on all open sides 5 feet or more above the adjacent floor or ground level, except where there is entrance to a ramp, stairway or fixed ladder. The railing shall be provided with a toe board wherever, beneath the open sides,

(1) Persons can pass,

(2) There is moving machinery, or

(3) There is equipment with which falling materials could create a hazard.

(b) The intermediate railing and toe board required by sections 50-204.27 and 50-204.29 may be omitted where materials have to be regularly passed over the edge of the floor (as in lumber storage), or where the railing is set back 12 inches or more from the edge.

(c) The entire railing may be temporarily removed from particular sections of open-sided floors where regular operating conditions make a permanent railing wholly impracticable.

§ 50-204.26 Runway guarding.

Every runway shall be guarded by a railing constructed in accordance with sections 50-204.27 and 50-204.29 on all open sides 5 feet or more above floor or ground level. Wherever tools, machine parts or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

(a) Runways, used exclusively for special purposes (such as oiling, shafting or filling tank cars), may have the railing on one side omitted where operating conditions necessitate such omission, providing there is no falling hazard.

RAILINGS AND GUARDS

§ 50-204.27 Standard railing.

A standard railing shall consist of top rail, intermediate rail and posts, having a vertical height of 42 inches from upper surface of top rail to floor, platform, runway or ramp level. The top rail shall be smooth surfaced throughout the length of the railing. The intermediate rail shall be approximately halfway between the top rail and floor, platform, runway or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.

§ 50-204.28 Stair railing.

A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(a) Intermediate rails shall not be required where stairways are 22 inches or less in width.

§ 50-204.29 Strength of standard railing and stair railing.

The strength of standard railings and stair railings under different types of construction is specified as follows:

(a) Wood railing: For wood railings, the posts shall be of at least 2 inch by 4 inch stock spaced not to exceed 8 feet; the top rails shall be of at least 2 inch by 4 inch stock or of two right angle pieces of at least 1 inch by 4 inch stock and the intermediate rails shall be of at least 2 inch by 2 inch stock or of at least 1 inch by 4 inch stock.

(b) Pipe railing: For pipe railings, the posts and top rails shall be metal pipe of at least 1¼ inches inside diameter and the intermediate rails shall be metal pipe of at least 1 inch inside diameter. The spacing of posts shall not exceed 8 feet.

(c) Structural metal railings: For structural metal railings, the posts and top rails shall be angle iron of at least 1½ inches by 1½ inches by 3/16 inch or other structural shapes of equivalent bending strength; and the intermediate rails shall be angle iron of at least 1¼ inches by 1¼ inches by ⅛ inch or other structural shapes of equivalent bending strength. The spacing of posts shall not exceed 8 feet.

(d) *Anchor posts:* The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point of the top rail.

(e) *Toe board:* A toe board shall be 4 inches in vertical height from top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and with not more than ¼ inch clearance above floor level. It may be made of any substantial material

either solid or with openings not over 1 inch in length.

ELEVATORS

§ 50-204.34 Elevator inspection.

Elevator inspection by a competent elevator inspection service or maintenance contract on an annual basis will be acceptable as evidence of satisfactory installation and maintenance.

§ 50-204.35 Hoistways.

All hoistway openings at the floor level to the elevator shall be protected by doors or gates either manually or mechanically operated, and interlocked with the elevator control so that it is impossible to start the elevator until the door or gate is locked in the closed position, and also so that it is impossible to open the door or gate when the car is not at the landing.

§ 50-204.36 Under car safety device.

All elevators other than hydraulic elevators shall be equipped with an under car safety device operated by speed governor control that will hold the elevator in case of cable failure or over speeding.

§ 50-204.37 Hatch limit controls.

All types of elevators shall be equipped with upper and lower travel limit devices that will normally bring the car to rest at either terminal, and a final limit switch that will prevent the movement in either direction if opened by the car as the result of excessive over travel in either direction.

ILLUMINATION

§ 50-204.42 Minimum standards.

(a) Illumination shall be provided and distributed to all working areas as required in these regulations.

(b) Seeing tasks requiring discrimination of fine detail under conditions of fair contrast and where the nature of the work is very exacting and prolonged shall be provided with a minimum of 100 foot-candles of illumination.

(c) Seeing tasks requiring discrimination of detail over prolonged periods of time and under conditions of moderate contrast shall be provided with a minimum of 50 foot-candles of illumination.

(d) Seeing tasks requiring moderate discrimination of detail over intermittent periods of time and under conditions of normal contrast shall be provided with a minimum of 30 foot-candles of illumination.

(e) Casual seeing tasks not involving discrimination of fine detail shall be provided with a minimum of 10 foot-candles of illumination.

(f) Rough seeing tasks not requiring critical seeing shall be provided with a minimum of 5 foot-candles of illumination

LADDERS

§ 50-204.47 Construction and use of portable ladders.

Portable ladders shall be substantially built, set level and well secured.

§ 50-204.48 Rails of portable ladders.

Rails of portable ladders shall always project at least three feet above working level and shall be of sound material.

§ 50-204.49 Painting of wooden ladders.

Wooden ladders shall not be painted, as painting covers up defects. Linseed oil or oil stain shall be used instead.

§ 50-204.50 Stepladders.

All stepladders shall be provided with an automatic locking device or spreader of not more than 40 degrees to hold the front and back sections in open position.

§ 50-204.51 Fixed ladders.

(a) Rest platforms: If fixed ladders are used to ascend to heights exceeding 30 feet, a landing or rest platform shall be provided for each 30 feet or fraction thereof unless the ladder is provided with safety cages.

(b) Rails: Rails of fixed ladders to landings shall extend a distance of at least 3 feet above the landing.

(c) Rungs: The rungs may be omitted above the landing. Where an employee must step a greater distance than 14 inches from the ladder to roof, tank, hoist, etc., a landing shall be provided.

(d) Guard rails: All fixed ladder landings shall be equipped with a standard guard rail and toe boards, so arranged as to give the safest possible access to the ladder. Such platforms shall not be less than 24 inches in width.

AISLES AND PASSAGEWAYS

§ 50-204.56 Maintenance.

Permanent aisles and passageways shall be kept clear and in good repair, with no obstructions across or in aisles that might cause tripping. Where, due to lack of proper identification, aisles and passageways are likely to become hazardous, they shall be clearly defined by painted lines, curbings, or other methods of marking.

§ 50-204.57 Aisle widths.

Where industrial trucks are in customary use, one-way traffic aisles shall be at least 2 feet wider than the widest vehicle. Two-way aisles shall be at least 3 feet wider than twice the width of the widest vehicle.

MATERIAL STORAGE

§ 50-204.62 Height.

(a) All material in bags, containers, or bundles, stored in tiers, shall be stacked, blocked, interlocked, and limited in height so that it is stable, so that it is secure against sliding or collapse.

(b) Where automatic sprinkler protection is provided, clearance of at least 18 inches shall be maintained between the tops of materials and the underside of lowest beams or other overhead structures. Where reliance is placed on hose streams, clearance of at least 3 feet shall be maintained between the tops of piles and the underside of the lowest beams, girders, or other obstructions which restrict the play of hose streams over the material.

§ 50-204.63 Small articles.

Small articles shall be stored in containers suitable to the material, such as small cans or trays that can be stacked.

§ 50-204.64 Pipe and other long stock.

Pipe and other long stock shall be stored in suitable racks or blocked to prevent spreading or rolling. Projecting ends shall be protected by location, railings, or barriers.

§ 50-204.65 Hazardous chemicals.

Hazardous chemicals shall be distinctively marked to indicate their nature and stored in containers or locations suitable to the material.

§ 50-204.66 Gases in cylinders.

(a) Cylinders shall be supported in an upright position so as to prevent them from falling or rolling.

(b) Cylinders shall be kept away from excessive heat, such as the direct rays of the sun.

(c) Cylinders shall be stored away from combustible materials.

(d) Empty cylinders shall be plainly marked "EMPTY," and the valves shall be closed. The empty cylinders shall be segregated from the full cylinders and returned to the supplier as soon as practicable.

(e) Valve covers shall be kept in place at all times when the cylinder is not in use.

OUTDOOR STORAGE

§ 50-204.71 Aisle spacing.

Aisles shall be maintained between piles, between buildings, and between piles and the boundary of the storage site. Aisles shall be wide so as to reduce the danger of spread of fire from pile to pile and to permit ready access for fire fighting or emergency removal of material.

§ 50-204.72 Housekeeping.

The entire storage site shall be kept free from unnecessary accumulations of combustible materials. Weeds and grass shall be kept down and the area kept clean.

§ 50-204.73 Drainage.

Proper drainage shall be provided.

§ 50-204.74 Clearance signs.

Clearance signs to warn of clearance limits shall be provided.

§ 50-204.75 Derail and bumper blocks.

Derail and bumper blocks shall be provided on spur tracks.

§ 50-204.76 Traffic control signs.

Traffic control signs to warn pedestrian, vehicular, and railroad traffic shall be provided.

§ 50-204.77 Open pits, tanks, vats, ditches, etc.

Covers or guard rails shall be provided to protect all open pits, tanks, vats, ditches, etc. near which people are regularly employed.

FLAMMABLE LIQUIDS

§ 50-204.82 Sources of ignition.

All sources of ignition shall be prohibited in areas where flammable liquids are stored, handled, and processed. Suitable warning and "No Smoking" signs shall be posted in all such areas.

§ 50-204.83 Vegetation removal.

The areas where flammable liquids are stored, handled, or processed shall be left clear of rubbish, brush, long grass, or other combustible material at all times.

§ 50-204.84 Housekeeping.

Accumulations of flammable liquids on floors, walls, and other surfaces, are prohibited. All spills of flammable liquids shall be cleaned up immediately.

§ 50-204.85 Electrical lighting.

Electrical lighting shall be the only means used for artificial illumination in areas where flammable liquids, vapors, fumes, dust, or gases are present. All electrical equipment and installations shall be of the explosion proof type.

§ 50-204.86 Ventilation.

All buildings, rooms and compartments where flammable liquids are stored, processed, or used shall be properly ventilated to prevent accumulation of flammable vapors.

§ 50-204.87 Refuse storage.

In buildings, shops, or rooms where flammable liquids are handled or stored, a self-closing metal refuse can shall be provided and maintained in good condition.

§ 50-204.88 Open flame devices prohibited.

Open flame heating devices shall not be used in areas where flammable liquids are present.

§ 50-204.89 Bonding and grounding.

Storage tanks and systems shall be electrically bonded and grounded.

§ 50-204.90 Relief vents.

Storage tanks shall be equipped with proper relief vents. Tank vents shall not be located close to open flames, stacks, heating apparatus, or any other source of ignition. Vent screens shall not be painted.

§ 50-204.91 Storage in other than flammable storage buildings.

A ventilated steel cabinet or a cabinet lined with noncombustible material shall be provided for the storage of more than a total of 10 gallons of flammable liquids in buildings used for other than storage. Not more than a total of 50 gallons shall be stored in any one cabinet, nor shall any individual container exceed 5 gallon capacity in such a cabinet. Containers must be of metal and kept tightly closed. Storage in drums of over 50 gallons of flammable liquids shall be outside the work room.

§ 50-204.92 Safety containers.

Handling of all flammable liquids by hand containers shall be in approved type-safety containers substantially constructed to avoid the danger of leakage and designed to minimize the likelihood of spilling.

PAINTS AND PAINTING

§ 50-204.97 Storage of paints, varnishes, lacquers, thinners, etc.

Packages containing paints, varnishes, lacquers, thinners, or other volatile materials shall be kept tightly closed when not in actual use.

§ 50-204.98 Storage locations.

Sealed containers of paints, varnishes, lacquers, thinners, and other flammable paint materials, shall be kept in a well-ventilated location, free from excessive heat, smoke, sparks, flame, or direct rays of the sun.

§ 50-204.99 Storage of flammable paint materials in opened containers.

Flammable paint materials, when in excess of 10 gallons and not exceeding 50 gallons, shall be stored in a ventilated steel cabinet, or a cabinet lined with noncombustible material. Containers shall be kept tightly closed when not in use.

§ 50-204.100 Paint-soiled clothing and drop cloth.

Paint-soiled clothing and drop cloths, when not in use, shall be stored in well-ventilated steel cabinets.

§ 50-204.101 Housekeeping.

Paint scrapings and paint saturated debris shall be removed from the premises daily.

§ 50-204.102 Ventilation of harmful substances.

Ventilation adequate to reduce the concentration of harmful substances in the atmosphere shall be provided, as referred to in section 50-204.86.

§ 50-204.103 Ventilation of flammable vapors.

Ventilation adequate to prevent the accumulation of flammable vapors to hazardous levels of concentration shall be provided in all areas where spray painting, dipping or similar processes are performed.

§ 50-204.104 Smoking or open flames prohibited.

No smoking, open flame, exposed flame heating elements, or other sources of ignition of any kind shall be permitted in areas or rooms where spray painting, paint dipping or similar processes are done.

§ 50-204.105 Electrical equipment.

When electric lights, switches, or electrical equipment are necessary where indoor spray painting, paint dipping or similar processes are performed, they shall be of the explosion-proof type.

§ 50-204.106 Electric motors.

Electric motors driving exhaust fans shall not be placed inside booths or ducts exhausting flammable materials.

§ 50-204.107 Enclosure driving belts.

Belts shall not enter duct or booth exhausting flammable materials unless belt and pulley within the duct or booth are thoroughly enclosed.

§ 50-204.108 Storage of combustible and flammable cleaning materials.

Combustible and flammable cleaning materials at the establishment shall be stored in tightly closed metal containers.

FIRE PREVENTION

§ 50-204.113 Equipment general.

Fire fighting equipment suitable to the conditions and hazards involved shall be provided and maintained in an effective operating condition. A systematic inspection of these devices is required.

§ 50-204.114 First-aid fire fighting extinguishers, general rules.

The following general rules shall be applied to all types of first-aid fire extinguishers:

(a) Persons who may have occasion to use any fire extinguisher shall have knowledge of the proper way to use the device effectively.

(b) The instructions of the manufacturer of the extinguisher as to charging, maintenance and operations shall be followed exactly. All extinguishers shall be examined at least once a year to determine positively that they are in operating condition.

(c) Frequent inspections shall be made to determine that extinguishers are in their designated places, are readily accessible, have not been damaged or tampered with, and that nozzles are not clogged.

§ 50-204.115 Classification of extinguishers.

Listed below are various classes of fires and the extinguishing equipment which shall be maintained appurtenant to the various materials identified.

(a) *Class "A" Fires.* Fires in ordinary combustible materials where the quenching and cooling effects of quantities of water or solutions containing large percentage of water are of first importance. Required extinguishing equipment—soda and acid, pump tank extinguishers or water barrels and buckets.

(b) *Class "B" Fires.* Fires in flammable liquids, greases, and similar materials, where blanketing effect is essential. Required extinguishing equipment—foam, carbon tetrachloride, CO_2, dry powder type extinguishers, or sand buckets and scoops. Carbon tetrachloride extinguishers shall not be used in a confined area.

(c) *Class "C" Fires.* Fire in electrical equipment where the use of nonconducting extinguishing agent is of first importance. Required extinguishing equipment—CO_2, or dry powder pressure-type extinguishers.

PRESSURE VESSELS

§ 50-204.120 Boilers.

Boiler inspection and approval on an annual basis by a recognized boiler inspection service will be acceptable evidence of satisfactory installation and maintenance.

§ 50-204.121 Steam cookers, digester, glue pots, etc.

All pressure vessels to which steam is supplied from an outside source shall be designed for the maximum line pressure to which the vessel will be subjected. On such vessels it is required that, in addition to the necessary pressure reducing valve, a safety valve be installed on the vessel itself or on the line between

it and the pressure reducer. There shall be no means of cutting off or bypassing this safety valve. Inspection and adequate maintenance of the vessel, including regular testing of the safety valve, are mandatory.

§ 50–204.122 Unfired pressure vessels.

(a) Air receivers shall be so installed that all drains, handholes, and manholes therein are easily accessible.

(b) Air receivers shall be supported with sufficient clearance to permit a complete external inspection and to avoid corrosion of external surfaces.

(c) Under no circumstances shall air receivers be buried underground or located in an inaccessible place.

(d) The receiver shall be located as close to the compressor or aftercooler as is possible to keep the discharge short.

(e) The receiver shall be located in a cool place to facilitate the condensation of moisture and oil vapors.

TOOLS AND EQUIPMENT

§ 50–204.127 Maintenance.

Each employer shall be responsible for the safe condition of the tools used by his employees, whether furnished by him or by them, and be sure that such tools are suited by safe design and construction for the work to be done.

§ 50–204.128 Portable electric power tools.

(a) Electric power tools showing worn, deteriorated or inadequate insulation, split or chipped plugs, worn or bent plugs, terminals, defective switch, shall be repaired.

(b) Portable electric power tools shall be effectively grounded to maintain at all times an effective ground on the noncurrent carrying parts of the tools.

§ 50–204.129 Portable pneumatic tools.

(a) The operating trigger on portable hand-operated pneumatic equipment shall be so located as to minimize the possibility of accidental operation and shall be arranged to close the air inlet valve automatically when the pressure of the operator's hand is removed.

(b) A tool retainer shall be installed on each piece of pneumatic equipment which, without such a retainer, may eject the tool.

(c) No tool change or work other than regular operations shall be made or done on any piece of portable hand-operated pneumatic equipment unless the stop valve in the air line supplying that equipment is closed.

§ 50–204.130 Cables, ropes, and chains.

(a) Chains, ropes, cables, hooks, rings, slings, and other devices and accessories used for hoisting and lifting shall not be subjected to greater working loads than recommended by their manufacturers. They shall be frequently inspected and shall be renewed when inspection reveals unsafe conditions.

(b) Bolts or nails shall not be used to connect, splice, or shorten chains. Knots shall not be tied in the chain.

(c) A hoist cable shall be considered unsafe and shall be replaced when upon inspection 10 percent or more of the total number of wires are broken in a length equal to eight diameters of the cable, or when the wires on the crown of the strand are worn down to less than 60 percent of their original diameter.

(d) Crane hoist cable shall be lubricated and inspected at frequent intervals.

VENTILATION AND PROTECTION IN WELDING AND CUTTING

§ 50–204.135 Welding and cutting in confined spaces.

For the purpose of this section a confined space shall mean:

(a) A space of less than 10,000 cubic feet per welder, or

(b) A space having an overhead height of less than 16 feet, or

(c) A space in which there are structural barriers to the extent that they significantly obstruct cross ventilation.

§ 50–204.136 Ventilation in confined spaces.

All welding and cutting operations carried on in confined spaces shall be adequately mechanically ventilated to prevent the accumulation of toxic gases or possible oxygen deficiency or air supplied respirators approved by the U.S. Bureau of Mines shall be provided to the welder and all other personnel in the immediate vicinity.

§ 50–204.137 Mechanical ventilation.

Mechanical ventilation shall consist of either general ventilation systems or local exhaust systems.

(a) General ventilation shall be at the minimum rate of 2,000 cubic feet per minute per welder.

(b) Local exhaust shall consist of freely movable hoods intended to be placed by the welder as near as practicable to the work being welded and provided with a rate of air flow sufficient to maintain a velocity in the direction of the hood of 100 linear feet per minute in the zone of welding when the hood is at its most remote distance from the point of welding.

§ 50–204.138 Welding and cutting involving metals of toxic significance.

(a) Welding and cutting involving the following metals whether or not in confined spaces or in other enclosed spaces shall be done in accordance with the provisions of sections 204.136 and 204.137.

(1) Zinc-bearing base of filler metals or metals coated with zinc-bearing materials.

(2) Lead base metals.

(3) Cadmium-bearing filler materials.

(b) Welding or cutting involving the following metals in confined spaces shall be done using local exhaust ventilation or air-line respirators approved by the U.S. Bureau of Mines.

(1) Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials, including paint.

(2) Cadmium-bearing or cadmium-coated base metals.

(3) Metals coated with mercury-bearing metals, including paint.

(4) Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-line respirators.

§ 50–204.139 Protection to other employees.

In all cases employees in the immediate vicinity of welding operations shall be protected in accordance with sections 50–204.269 and 50–204.298.

§ 50–204.140 Inert-gas metal-arc welding.

Since the inert-gas metal-arc welding process involves the production of ultraviolet radiation of intensities five to thirty times that produced during shielded metal-arc welding, the decomposition of chlorinated solvents by ultraviolet rays, and the liberation of toxic fumes and gases, employees shall not be permitted to engage in, or be exposed to the process unless:

(a) The use of chlorinated solvents is kept at least 200 feet from the exposed arc; surfaces prepared with chlorinated solvents are thoroughly dry before welding is permitted on such surface.

(b) Shaded goggles with side shields are worn by helpers and others in the area not protected from the arc by screening.

(c) Protective clothing is worn by welders and others within the area exposed to radiation so that the skin is covered completely to prevent burns and other damage by ultraviolet rays; shirts worn are dark in color to reduce reflection to the face from underneath the helmet; exposed cotton clothing is covered since it disintegrates rapidly when exposed to high intensities of ultraviolet rays; welding helmets and hand shields are free of leaks and openings, and free of highly reflective surfaces.

(d) Local exhaust ventilation or supplied air respirators are provided in all cases when doing inert-gas metal-arc welding of stainless steel to protect against dangerous concentrations of nitrogen dioxide.

§ 50–204.141 General welding and cutting.

Welding and cutting not involving conditions or materials described in sections 50–204.135 and 50–204.138 may normally be done without special precautions, but where, because of unusual physical or atmospheric conditions, a harmful accumulation of contaminants would exist, mechanical ventilation or suitable respiratory protective equipment shall be provided.

ELECTRICAL INSTALLATION AND EQUIPMENT

§ 50–204.148 Electrical installation and equipment.

Electrical conductors and equipment installed within or on buildings and other premises and the conductors that connect the installation to a supply of electricity and other outside conductors adjacent to the premises shall conform to the minimum requirements of the National Electrical Code, 1959 Edition, National Fire Protection Association.

MECHANICAL POWER TRANSMISSION APPARATUS

§ 50–204.153 Flywheels.

Flywheels located so that any part is 7 feet or less above floor or platform shall be guarded in one of the following ways:

(a) With an enclosure of sheet, perforated, or expanded metal, or woven wire. For standards, see sections 50–204.179 and 50–204.180.

(b) With guard rails placed not less than 15 inches nor more than 20 inches from rim. When flywheel extends into pit or is within 12 inches of floor, a standard toe board shall also be provided. For standards, see section 50–204.185.

(c) An adjustable guard to be used for starting the engine or for running adjustment may be provided at the flywheel of gas or oil engines. A slot opening for the jack bar will be permitted.

(d) Wherever flywheels are above working areas, guards shall be installed having sufficient strength to hold the weight of the flywheel in the event of a shaft or wheel mounting failure.

§ 50–204.154 Cranks and connecting rods.

Cranks and connecting rods, when exposed to contact, shall be guarded in accordance with sections 50–204.179 and 50–204.180 or by a guard rail as described in section 50–204.185.

§ 50–204.155 Tail rods or extension piston rods.

Tail rods or extension piston rods shall be guarded in accordance with sections 50–204.179 and 50–204.181 or by a guard rail on sides and end, with a clearance of not less than 15 nor more than 20 inches when rod is fully extended.

§ 50–204.156 Governor balls.

Governor balls 6 feet or less from the floor or other working level, when exposed to contact shall be provided with an enclosure extending to the top of the governors balls when at their highest position. The material used in the construction of this enclosure shall conform to sections 50–204.179 and 50–204.181.

§ 50–204.157 Shafting installation.

(a) Each continuous line of shafting shall be secured in a position against excessive end-wise movement.

(b) Inclined and vertical shafts, particularly inclined idler shafts, shall be securely held in position against endwise thrust.

§ 50–204.158 Guarding horizontal shafting.

(a) All exposed parts of horizontal shafting 7 feet or less from floor or working platform, excepting runways used exclusively for oiling, or running adjustments, shall be protected by a stationary casing enclosing shafting completely or by a trough enclosing sides and top or sides and bottom of shafting as location requires.

(b) Wherever shafting extends over a driveway, it shall be protected as stated above unless it is located 15 feet or more above driveway.

(c) Shafting under bench machines shall be enclosed by a stationary casing, or by a trough at sides and top or sides and bottom, as location requires. The sides of the trough shall come within at least 6 inches of the underside of table, or if shafting is located near floor, within 6 inches of floor. In every case the sides of the trough shall extend at least 2 inches beyond the shafting or protuberance. For requirements regarding materials and construction, see sections 50–204.179 and 50–204.181.

§ 50–204.159 Guarding vertical and inclined shafting.

Vertical and inclined shafting 7 feet or less from floor or working platform, excepting maintenance runways, shall be enclosed with a stationary casing in accordance with requirements of sections 50–204.179 and 50–204.181.

§ 50–204.160 Projecting shaft ends.

(a) Projecting shaft ends shall present a smooth edge and end and shall not project more than one-half the diameter of the shaft unless guarded by nonrotating caps or safety sleeves.

(b) Unused key-ways shall be filled up or covered.

§ 50–204.161 Power-transmission apparatus located in basements.

All mechanical power transmission apparatus located in basements, towers, and rooms used exclusively for power transmission equipment shall be guarded in accordance with these standards; except that the requirements for safeguarding belts, pulleys, and shafting may be omitted if the following conditions are met:

(a) The basement, tower, or room occupied by transmission equipment is locked against unauthorized entrance.

(b) The vertical clearance in passageways between the floor and power transmission beams, ceiling, or any other objects, is not less than 5 feet 6 inches.

(c) The footing is dry, firm, and level.

(d) The route followed by the oiler is protected in such manner as to prevent accidents.

§ 50–204.162 Pulleys.

Any parts of which are 7 feet or less from the floor or working platform shall be guarded in accordance with the standards specified under section 50–204.179 and 50–204.181. Pulleys serving as balance wheels (e.g., punch presses) on which the point of contact between belt and pulley is more than 6 feet 6 inches from the floor or platform may be guarded with a disk covering the spokes. See section 50–204.180.

§ 50–204.163 Horizontal belts, ropes and chain drives.

(a) Where both runs of horizontal belts are 7 feet or less from the floor level, the guard shall extend to at least fifteen inches above the belt or to a standard height (see table, section 50–204.181) except that where both runs of a horizontal belt are 42 inches or less from the floor, the belt shall be fully enclosed in accordance with sections 50–204.179 and 50–204.181. In power plants or power-development rooms, a guard rail may be used in lieu of the requirement in section 50–204.163.

(b) Overhead horizontal belts, with lower part 7 feet or less from the floor or platform, shall be guarded on sides and bottom in accordance with section 50–204.183.

(c) Horizontal overhead belts more than 7 feet above floor or platform shall be guarded for their entire length under the following conditions:

(1) If located over passageways or work places and traveling 1800 feet or more per minute.

(2) If center to center distance between pulleys is 10 feet or more.

(3) If belt is 8 inches or more in width. For detail of guard construction and for sizes of material see section 50–204.183 and table following section 50–204.184.

(d) Where the upper and lower runs of horizontal belts are so located that passage of persons between them would be possible, the passage shall be either:

(1) Completely barred by a guard rail or other barrier in accordance with sections 50–204.179 and 50–204.181, or

(2) Where passage is regarded as necessary, there shall be a platform over the lower run guarded on either side by a railing completely filled in with wire mesh or other filler, or by a solid barrier. The upper run shall be so guarded as to prevent contact therewith either by the worker or by objects carried by him. In power plants, only the lower run of the belt need be guarded.

§ 50–204.164 Overhead chain and link belt drives.

Overhead chain and link belt drives are governed by the same rules as overhead horizontal belts and shall be guarded in the same manner as belts (section 50–204.163).

§ 50–204.165 Vertical and inclined belts.

(a) Vertical and inclined belts shall be enclosed by a guard conforming to standards in sections 50–204.179 and 50–204.181.

(b) All guards for inclined belts shall be arranged in such a manner that a minimum clearance of 7 feet is maintained between belt and floor at any point outside of guard.

§ 50–204.166 Vertical belts.

Vertical belts running over a lower pulley more than 7 feet above floor or platform shall be guarded at the bottom in the same manner as horizontal overhead belts, if conditions are such as stated in section 50–204.163(c) (1), (2), and (3).

§ 50–204.167 Cone-pulley belts.

(a) The cone belt and pulley shall be equipped with a belt shifter so constructed as to guard adequately the nip-point of the belt and pulley. If the frame of the belt shifter does not adequately guard the nip-point of the belt and pulley, the nip-point shall be further protected by means of a vertical guard placed in front of the pulley and extending at least to the top of the largest step of the cone.

(b) If the belt is of the endless type or laced with rawhide laces, and a belt shifter is not desired, the nip-point of the belt pulley shall be protected by a nip-point guard located in front of the cone extending at least to the top of the largest step of the cone, and formed to show the contour of the cone in order

to give the nip-point of the belt and pulley the maximum protection.

(c) If the cone is located less than 3 feet from the floor or working platform, the cone pulley and belt shall be guarded to a height of 3 feet regardless of whether the belt is endless or laced with rawhide.

§ 50–204.168 Gears.

Gears shall be guarded in accordance with one of the following specifications:

(a) A complete enclosure.

(b) A standard guard as described in section 204.181 at least 7 feet high extending 6 inches above the mesh point of the gears.

(c) By a band guard covering the face of the gear and having flanges extended inward beyond the root of the teeth on the exposed side or sides. Where any portion of the train of gears guarded by a band guard is less than 6 feet from the floor a disk guard or a complete enclosure to the height of 6 feet shall be required.

§ 50–204.169 Sprockets and chains.

All sprocket wheels and chains shall be enclosed unless more than 7 feet above the floor or platform. Where the drive extends over other machines or working areas, protection against falling shall be provided.

§ 50–204.170 Openings for oiling.

When frequent oiling must be made, openings with hinged or sliding self-closing covers shall be provided. All points not readily accessible shall have oil feed tubes if lubricant is to be added while machinery is in motion.

§ 50–204.171 Friction drives.

(a) The driving point of all friction drives when exposed to contact shall be guarded.

(b) All arm or spoke friction drives and all web friction drives with holes in the web shall be entirely enclosed.

(c) All projecting bolts on friction drives where exposed to contact shall be guarded.

§ 50–204.172 Keys, set screws, and other projections.

All projecting keys, set screws and other projections in revolving parts shall be removed or made flush or guarded by metal covers. This does not apply to keys or set screws within gear or sprocket casings or other enclosures, nor to keys, set screws, or oil cups in hubs of pulleys less than twenty inches in diameter where they are within the plane of the rim of the pulley.

§ 50–204.173 Collars.

All revolving collars, including split collars, shall be cylindrical, and screws or bolts used in collars shall not project beyond the largest periphery of the collar.

§ 50–204.174 Couplings.

(a) Shaft couplings shall be so constructed as to present no hazard from bolts, nuts, set screws, or revolving surfaces.

(b) Bolts, nuts, and set screws will, however, be permitted where they are covered with safety sleeves or where they are used parallel with the shafting and are countersunk or else do not extend beyond the flange of the coupling.

GUARD STANDARDS FOR MECHANICAL POWER TRANSMISSION

§ 50–204.179 Materials.

(a) Standard conditions will be secured by the use of the following materials: Expanded metal, perforated or solid metal or wire mesh on a frame of angle iron or iron pipe securely fastened to floor or to frame of machine (see section 50–204.181).

(1) All metal shall be free from burrs and sharp edges.

(2) Wire mesh shall be of the type in which the wires are securely fastened at every cross point either by welding, soldering, or galvanizing, except in case of diamond or square wire mesh made of No. 14 gauge wire, ¾ inch mesh or heavier.

(b) Design of guards:

(1) Where it is necessary to change belts, make adjustments or apply oil or grease, guards shall have hinged sections or be removable.

(2) Guards shall be designed so as not to interfere with the usual machine operations, but give the maximum protection to the operator.

(c) Methods of manufacture:

(1) Filler material shall be expanded metal, sheet or perforated metal, or wire mesh and be securely fastened to frame.

(2) By welding to frame every 4 inches. By weaving through channel or angle frame, or if No. 14 gauge ¾ inch mesh or heavier is used, by bending entirely around rod frames.

(3) Where openings in pipe railing are to be filled in with expanded metal, wire or sheet metal, the filler material shall be made into panels with rolled edges or bound with "V" or "U" edging of No. 24 gauge or heavier sheet metal fastened to the panels with bolts or rivets spaced not more than 5 inches center to center. The bound panels shall be fastened to the railing by sheet-metal clips spaced not more than 5 inches center to center.

(4) Where the design of guards requires filled material of greater area than 12 square feet, additional frame members shall be provided to maintain panel area within this limit.

(5) All joints of framework shall be made equivalent in strength to the material of the frame.

§ 50–204.180 Disk, shield, and "U" guards.

(a) Disk guard: A disk guard shall consist of a sheet-metal disk not less than No. 22 gauge fastened by "U" bolts or rivets to spokes of pulleys, flywheels, or gears. Where possibility of contact with sharp edges of the disk exists, the edge shall be rolled or wired. In all cases the nuts shall be provided with lock nuts which shall be placed on the unexposed side of the wheel.

(b) Shield guards.

(1) A shield guard shall consist of a frame filled in with wire mesh, expanded, perforated, or solid sheet metal.

(2) If area of shield does not exceed 6 square feet the wire mesh or expanded metal may be fastened in a framework of ⅜ inch solid rod, ¾ inch x ¾ inch x ⅛ inch angle iron or metal construction of equivalent strength.

(3) Metal shields may have edges entirely rolled around a ⅜ inch solid iron rod. All material of shield guard shall meet the requirements of section 50–204.181.

(c) "U" Guards: A "U" guard consisting of a flat surface with edge members shall be designed to cover the under surface and lower edge of a belt, multiple chain, or rope drive. It shall be constructed of materials specified in table of section 50–204.181 and shall conform to the requirements of sections 50–204.183 and 50–204.184. Edges shall be smooth, and if size of guard requires, these edges shall be reinforced by rolling, wiring, or by binding with angle or flat iron.

§ 50–204.181 Approved materials.

(a) Minimum Requirements. The materials and dimensions specified in this section shall apply to all guards except horizonal overhead belts, rope, cable or chain guards more than 7 feet above floor, or platform. (For the latter, see table following section 50–204.184.)

TABLE OF STANDARD MATERIALS AND DIMENSIONS

Material	Clearance from moving part at all points	Largest mesh or opening allowable	Minimum gauge (U.S. standard) or thickness	Minimum height of guard from floor or platform level
Woven wire	Under 2"	½"	No. 16	7'0".
	2"–4"	½"	No. 16	7'0".
	Under 4"	½"	No. 16	7'0".
	4"–15"	2"	No. 12	7'0".
Expanded metal	Under 4"	½"	No. 18	7'0".
	4"–15"	2"	No. 13	7'0".
Perforated metal	Under 4"	½"	No. 20	7'0".
	4"–15"	2"	No. 14	7'0".
Sheet metal	Under 4"		No. 22	7'0".
	4"–15"		No. 22	7'0".
Wood or metal strip crossed	Under 4"	½"	Wood 1" / Metal No. 16	7'0".
	4"–15"	2"	Wood 1" / Metal No. 16	7'0".
Wood or metal strip not crossed	Under 4"	½" width	Wood ¾" / Metal No. 16	7'0".
	4"–15"	1" width	Wood 1" / Metal No. 16	7'0".
Std. rail	Min. 15" / Max. 20"	See Standard for Railings Section 204.185.		

(b) Framework:

(1) Minimum dimensions of material for the framework of all guards except as noted in subparagraph (5) of this paragraph shall be angle iron 1 inch x 1 inch x ⅛ inch, metal pipe of ¾ inch inside diameter or metal construction of equivalsnt strength.

(2) All guards shall be rigidly braced every 3 feet or fractional part of their height to some fixed part of machinery or building structure. Where guard is exposed to contact with moving equipment additional strength is necessary.

(3) The framework for all guards fastened to floor or working platform and without other support or bracing shall consist of 1½ inch x 1½ inch x ⅛ inch angle iron, metal pipe or 1½ inch inside diameter or metal construction of equivalent strength. All rectangular guards shall have at least 4 upright frame members each of which shall be carried to the floor and be securely fastened thereto.

(4) Cylindrical guards shall have at least 3 supporting members carried to floor.

(5) Guards thirty inches or less in height and with a total surface not in excess of ten square feet may have a framework of ⅜ inch solid rod, ¾ inch x ¾ inch x ⅛ inch angle or metal construction of equivalent strength. The filling material shall correspond to the requirements of the table contained in paragraph (a) of this section.

(c) The specifications given in paragraphs (a) and (b) of this section are the minimum requirements; where guards are exposed to unusual wear, deterioration or impact, heavier material and construction shall be used to protect amply against the specific hazards involved.

§ 50-204.182 Wood guards.

(a) Wood guards may be used in the woodworking and chemical industries, in industries where the presence of fumes or where manufacturing conditions would cause the rapid deterioration of metal guards; also in construction work and in locations outdoors where extreme cold or extreme heat makes metal guards and railings undesirable. In all other industries, wood guards will not be allowed.

(b) Material and construction

(1) Wood shall be sound, tough, and free from any loose knots.

(2) Guards shall be made of planed lumber not less than one inch rough board measure and edges and corners rounded off.

(3) Wood guards shall be securely fastened together with wood screws, hard wood dowel pins, bolts, or rivets.

(4) While no definite dimensions are given under this heading for framework or filler materials, wood guards shall be equal in strength and rigidity to metal guards specified in section 50-204.181 (a) (b) (c).

(5) For construction of standard wood railing, see section 50-204.185.

§ 50-204.183 Guards for horizontal overhead belts.

(a) Guards for horizontal overhead belts shall run the entire length of the belt and follow the line of the pulley to the ceiling or be carried to the nearest wall, thus enclosing the belt effectively. Where belts are so located as to make it impracticable to carry the guard to wall or ceiling, construction of the guard shall be such as to enclose completely the top and bottom runs of belt and the face of pulleys. See section 50-204.163 (b) and (c).

(b) The guard and all its supporting members shall be securely fastened to wall or ceiling by gimlet-point lag screws or through bolts. In case of masonry construction, expansion bolts shall be used.

(c) Suitable reinforcement shall be provided for the ceiling rafters or overhead floor beams, where such is necessary, to sustain safely the weight and stress likely to be imposed by the guard. The interior surface of all guards, by which is meant the surface of the guard with which a belt will come in contact, shall be smooth and free from all projections of any character, except where construction demands it; protruding shallow round-head rivets may be used. Overhead belt guards shall be at least one-quarter wider than the belt which they protect, except that this clearance need not in any case exceed 6 inches on each side. Overhead rope drive and block and roller-chain-drive guards shall be not less than 6 inches wider than the drive on each side.

In overhead silent chain-drive guards where the chain is held from lateral displacement on the sprockets, the side clearances required on drives of 20 inch centers or under shall not be less than ¼ inch from the nearest moving chain part and on drives of over 20 inch centers a minimum of ½ inch from the nearest moving chain part.

(d) The table following section 50-204.184 gives sizes of materials to be used and general construction of guards for belts 10 inches or more in width. No material for overhead belt guards should be smaller than that specified in this table for belts 10 to 14 inches wide, even if the belt is less than 10 inches in width. However, No. 20 gauge sheet metal may be used as a filler on guards for belts less than 10 inches wide. Expanded metal, because of the sharp edges, shall not be used as a filler in horizontal belt guards.

(e) For clearance between guards and belts, ropes or chains of various center to center dimensions between the shafts, see bottom of table following section 50-204.184.

§ 50-204.184 Guards for horizontal overhead rope and chain drives.

Overhead-rope and chain-drive guard construction shall conform to section 50-204.183 for overhead-belt guard construction of similar width, except that the filler materials shall be of the solid type as shown in table following section 50-204.181(a) unless the fire hazard demands the use of open construction. A side guard member of the same solid filling material shall be carried up in a vertical position 2 inches above the level of the lower run of the rope or chain drive and 2 inches within the periphery of the pulleys which the guard encloses thus forming a trough. These side filler members shall be reinforced on the edges with 1½ inch x ¼ inch flat steel, riveted to the filling material at not greater than 8 inch centers; the reinforcing strip shall be fastened or bolted to all guard supporting members with at least one ⅜ inch rivet or bolt at each intersection, and the ends shall be secured to the ceiling with lag screws or bolts. The filling materials shall be fastened to the framework of the guard and the filler supports by ⅜ inch rivets spaced on 4 inch centers. The width of the multiple drive shall be determined by measuring the distance from the outside of the first to the outside of the last rope or chain in the group accommodated by the pulley.

§ 50-204.185 Guard rails and toe boards.

(a) Guard rails shall be 43 inches in height, with mid-rail between top rail and floor.

(b) Posts shall be not more than 8 feet apart; they are to be permanent and substantial, smooth, and free from protruding nails, bolts, and splinters. If made of pipe, the post shall be 1¼ inches inside diameter, or larger. If made of metal shapes or bars, their section shall be equal in strength to that of 1½ by 1½ by ⅜ inch angle iron. If made of wood, the posts shall be 2 x 4 inches or larger. The upper rail shall be 2 x 4 inches or two 1 x 4 strips, one at the top and one at the side of posts. The mid-rail shall be 1 x 4 inches or more. The rails (metal shapes, metal bars, or wood), shall be on that side of the posts which gives the best protection and support. Where panels are filled with expanded metal or wire mesh as noted in table, section 204.181 the middle rails may be omitted. Where guard is exposed to contact with moving equipment, additional strength may be necessary.

(c) Toe boards shall be 4 inches or more in height, of wood, metal, or of metal grill not exceeding 1 inch mesh.

MISCELLANEOUS MACHINE GUARDING

§ 50-204.190 Lathes and automatic screw machines.

(a) Chucks and face plates shall be free from projections, and dogs, if used, shall be of the safety type only—circular in shape with no projections beyond the periphery.

(b) Chip guards to catch flying chips, particularly in the case of the high speeds used in the softer metals, shall be provided.

(c) Rotating stock in turret lathes and automatic screw machines shall be completely enclosed in pipe long enough to contain the longest stock used.

(d) Suitable shields and oil catchers shall be provided to prevent slipperiness from oil thrown from the automatic screw machines.

§ 50-204.191 Drill presses.

(a) All projections on the rotating spindle and as much as possible of the spindle itself should be guarded.

(b) Spindle drive belts, when in range of the operator's head or body, shall be guarded to protect the operator from both contact and breakage.

GUARD REQUIREMENTS FOR HORIZONTAL OVERHEAD BELTS, ROPES, AND CHAINS 7 FEET OR MORE ABOVE FLOOR OR PLATFORM

Members	Width			Material
	Over 10" to 14" incl.	Over 14" to 21" incl.	Over 24"	
Framework	1½" x 1½" x ⅛"	2" x 2" x 3/16"	3" x 3" x 3/16"	Angle iron.
Filler (belt guards)	1½" x 3/16"	2" x 3/16"	2" x 3/16"	Flat iron.
Filler and vertical side member	No. 20 A.W.G.	No. 16 A.W.G.	No. 16 A.W.G.	Solid sheet metal.
Filler supports	2" x ⅛" flat iron	2" x ⅜" flat iron	2½" x 2½" x ¼" angle.	Flat & Angle.
Guard supports	2" x ⅛"	2" x ⅜"	2½" x ⅜"	Flat iron.
FASTENINGS				
Filler supports to framework	(2) ⅜"	(2) ⅜"	(3) ½"	Rivets.
Filler bars to supports (belt guards)	(1) ⅜"	(1) ⅜"	(2) ⅜"	Flush rivets.
Filler to frame and supports (rope and chain guards).	¾" rivets spaced, 8" centers on sides and 4" centers on bottom.			
Guard supports to framework	(2) ⅜"	(2) ⅜"	(2) ⅜"	Rivets or bolts.
Guard and supports to overhead ceiling.	⅜" x 2½" lag screws or ½" bolts.	⅜" x 4" lag screws or ⅝" bolts.	⅜" x 6" lag screws or ¾" bolts.	Lag screws or bolts.
DETAILS—SPACING, ETC.				
Width of guards	one-quarter wider than belt, rope, or chain drive.			
Spacing between filler supports	24" C. to C.	16" C. to C.	10" C. to C.	
Spacing between filler flat (belt guards).	2" apart	2½" apart	3" apart	
Spacing between guard supports	36" C. to C.	36" C. to C.	36" C. to C.	
OTHER BELT GUARD FILLING PERMITTED				
Sheet metal fastened as in rope and chain guards.	No. 20 A.W.G.	No. 18 A.W.G.	No. 16 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 12 A.W.G.	No. 10 A.W.G.	No. 8 A.W.G.	

CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD

Distance center to center of shafts	Up to 15' incl.	Over 15' to 25' incl.	Over 25' to 40' incl.	Over 40',
Clearance from belt, rope, or chain to guard.	6".	10".	15".	20".

§ 50-204.192 Planers and shapers (metal).

(a) The spaces between the ways of planer frames shall be filled in smoothly with heavy sheet metal to eliminate the shear hazard.

(b) Where there is not a 12-inch clearance between a fixed object and the planer table and the work carried on the table, a railing shall be provided between the fixed object and the table and the work on the table to protect workers passing between the fixed object and the planer.

§ 50-204.193 Shears.

(a) Alligator shears shall be guarded by running a heavy U-shaped metal strap horizontally around the moving (upper) jaw with the lower edge of the strap just far enough above the cutting edge of the fixed (lower) jaw to allow the material to be inserted in the shears.

(b) Squaring shears shall be provided with a fixed barrier which clears the top of the table by not more than ⅜ inch plus the minimum thickness of material for which used. Automatic clamps shall be acceptable as guards when cutouts are filled in so that fingers of the operator cannot enter the danger zone.

§ 50-204.194 Guillotine cutters, power-driven.

(a) Power-driven guillotine cutters shall be equipped with a guard or device which will prevent the hands of the workers from entering the zone traveled by the knife while the knife is in motion. This may be a fixed barrier or it may consist of a two-handed device requiring the simultaneous use of the worker's two hands at points outside the zone of danger.

(b) In addition to the point of operation guard or device described in section 50-204.194(a), the power-driven guillotine cutter shall be provided with an arrangement which will prevent the cutter from making a second stroke until the lever or two-handed device is again used.

§ 50-204.195 Power presses.

(a) *Safeguarding classification.* One or more means of safeguarding the press at the point of operation shall be provided and used on every power press, depending upon the method of feeding, in accordance with the following:

SAFEGUARDING CLASSIFICATION

Method of feeding press	*Safeguarding required*
Automatic feed: Automatic roll feed. Automatic push, pull or dial feed.	Fixed barrier guard or gate guard (section 50-204.195 (c), (d)
Semiautomatic feed: Chute feed (both gravity and follow feed). Slide or push feed. Sliding dies. Dial feed. Revolving dies.	Fixed barrier guard or gate guard (section 50-204.195 (c), (d)
Manual feed	Fixed barrier guard or gate guard, two-hand tripping device, or pull-out guard, electronic sweep guard. (section 50-204.195 (c), (d), (e), (f), (g), (h))

(b) *General requirements for point of operations guarding.* Every point of operation guarding device shall be simple and reliable in construction, application, and adjustment. It shall be permanently attached to the press or the die. It shall not offer any accident hazard in itself.

(1) The device shall be designed and constructed so that it is impossible for the operator to place or permit his hand or fingers to remain within the danger zone created by the movement of the ram.

(2) Care shall be used in the selection of the method of guarding for each particular job. Guards shall be installed, maintained, and adjusted to produce safe operation at each setting of the press.

(3) Guards which are attached to the ram and which move downward so that the operator's hand or fingers might be caught between gate and lower die shall not be used.

(c) *Fixed barrier guard.* (1) A fixed barrier guard is an enclosure to prevent the hands or fingers of the operator from entering the area between the dies. It may be attached to the press or individual guards may be attached to the dies.

(2) There shall be no exposed shear points between the guard and any moving part.

(3) Openings in the guard or between the guard and working surface shall not be greater than those shown in the Table below:

PERMISSIBLE OPENINGS (INCHES)

Distance of opening from nip point:	*Maximum width of opening*
0½ to 1½	¼
1½ to 2½	3/8
2½ to 3½	½
3½ to 5½	5/8
5½ to 6½	¾
6½ to 7½	7/8
7½ to 8½	1¼

(4) For the portion of the guard between the operator and the die or working area, it is required that 3/16-inch minimum vertical steel rods, vertically slotted material, or shatterproof, nonflammable, transparent material be used. Mesh, or perforated plate shall not be used between the operator and the die.

(5) Any hinged or movable section of a fixed barrier guard shall be connected to an interlocking device that will prevent tripping the press while the section is open.

(d) *Gate guards.* (1) A gate guard is a movable barrier arranged so that it completes the enclosure of the point of operation before the operating clutch can become engaged.

(2) Openings in the barrier of the gate guard shall be not greater than those specified for the openings in fixed barrier guards in section 50-204.195(c)(3). The mechanism of the guard shall be designed so that there will be no positive linkage or other close motion which may trap the hand of the operator.

(3) Gate guards shall include either fixed or movable side enclosures around the die.

(4) When the speed of the ram is so slow that an operator might beat the ram on the down stroke after the press has been tripped, the gate guard shall be designed so that the gate remains closed until the ram has completed the down stroke.

(c) *Two-hand tripping device.* (1) Two-hand tripping devices include only those which make it impossible to trip the press without the simultaneous use of both hands outside the danger zone. It shall be designed, located, and arranged so as to prevent tying, wedging, or otherwise securing one handle or button or operating it with any gesture or device and tripping the press while the other hand may be in the danger zone.

(2) On friction-clutch-operated presses, the controls shall be arranged so that if any hand is removed from a control during the down stroke of the ram, it will be instantly stopped.

(3) Where two or more persons are engaged in the operation of a single press, separate two-hand controls shall be provided for each person, except that an auxiliary foot control (air or electric) may be used in lieu of one set of two-hand controls, provided the foot control is located so that the nip point is out of the reach of the operator, but the foot controls shall in no case be less than a distance of 36 inches measured horizontally from the nip point.

(f) *Pull-out guards.* (1) Pull-out guards shall be so constructed as to be attached to the operator's hands or arms and connected to the ram, plunger, or outer slide of the press in such a way that the operator's hands and fingers will be withdrawn from the danger zone before the ram, plunger, or outer slide descends to a hazardous point.

(2) Where the open distance between the top of the work and the lower extremity of the punch is less than 2 inches the multiplying action of this guard shall be such that the hands will be withdrawn a safe distance before this open distance is ¼ closed.

(g) *Electronic safety device.* (1) An electronic safety device shall be so designed and installed that when the operator's hand or any part of the body is in the die zone, the press cannot be tripped and if the hand or any part of the body is inserted while the ram is in a downward motion, it will immediately stop the ram.

(2) These guards shall be operated from a circuit wired so that interruption of the electric current will automatically prevent the press from tripping until the current has been restored.

(3) Electronic safety devices shall not be used on positive clutch presses where the ram continues for a complete stroke after each tripping of the press.

(h) *Sweep guards.* (1) Sweep guards may be provided with either single or double sweep arms. The sweep arm, or arms, shall be connected to the ram in such a way as to forcibly sweep the hands of the operator from the die zone as the ram or plunger descends and before there is danger of injury.

(2) Sweep guards shall be so designed and operated that the operator cannot reach behind the guard in the danger zone before the ram has completed its downward stroke.

(3) The sweep or sweeps shall not offer any hazard of or in themselves by creating a shear hazard between the sweep arm and press tie rods, die straps, or other parts of the press or guard.

(i) *One-hand tripping device.* Whenever a press is set up so as to require tripping the ram or plunger by one hand, additional guarding as specified in section 50–204.195 shall be provided.

(j) *Special hand tools.* Hand tools for placing and removing material shall be such as to permit easy handling of material without the operator's placing a hand in the danger zone. Such tools shall not be accepted in lieu of other guarding as provided in this section.

§ 50–204.196 Foot presses.

Foot presses shall be guarded by one or more of the guards described in section 50–204.195 (a) to (d), inclusive.

(a) *Fixed barrier guards.* Fixed barrier guards shall conform to section 50–204.195(c).

(b) *Limitation of stroke.* If a foot or kick press is guarded by limitation of the ram stroke, the adjustment must be set and locked securely in position to limit the maximum travel of the ram to ⅜ inch on each stroke. There shall be no pinching or crushing hazards between other parts of the ram or die shoe.

(c) *Gate guards.* A gate shall be designed to close the opening at the front of the press before the foot lever can be operated.

(d) *Two-hand operation.* Two-hand operations shall conform to section 50–204.195(e).

(e) *Sweep guards.* Sweep guards shall conform to section 50–204.195(h).

(f) *Pull-out guards.* Pull-out guards shall conform to section 50–204.195(f).

(g) *Location.* Foot presses shall not be located in a position which will permit the operating lever to extend into an aisle or passageway.

(h) *Mounting.* Foot presses shall be securely bolted to the floor.

§ 50–204.197 Other power-press safety devices.

(a) *Treadle guard.* A substantial guard shall be placed over the treadle of every foot-operated power press to prevent accidental tripping.

(b) *Foot treadle.* The use of tension springs or counterweights on any treadle shaft or tension springs on any treadle-shaft lever is prohibited.

(c) *Latch on hand-operating lever.* Hand-operated power presses, shall be equipped with a spring latch on the operating lever to prevent accidental or premature tripping.

(d) *Interlocking device.* Each hand-operated power press, if tended by more than one person at one time shall conform to the requirements of section 50–204.195(e) (1) and (3).

(e) *Single-stroke attachments.* On positive-type clutch presses a single-stroke attachment shall be provided, by which the treadle or operating lever is disconnected after each stroke.

§ 50–204.198 Platen presses.

Platen presses shall be provided with an automatic feed device, an automatic stop device, a guard gate or sweep motion device, or another device, all as defined in this section.

(a) An automatic feed device is one which does not require the operator's hand to be placed between the platen and bed.

(b) An automatic stop device is one which will prevent the platen from closing if the hand or hands of the operator are caught between the platen and the bed.

(c) A guard, gate or sweep motion device, is one which will throw the operator's hands out of the way before the press closes. If the guard is of the type which lifts the hands out of the danger zone, it shall rise at least 4 inches above the platen before the press closes. The guard shall be arranged so that it will prevent a shear between the guard and the top of the platen.

(d) "Another device" is one that will prevent the platen from closing on the operator's hands before they are removed from between the platen and the bed.

§ 50–204.199 Abrasive wheels.

(a) The machine shall be securely mounted on substantial floors, benches, foundations or other adequate structures.

(b) *Guards.* Every stationary abrasive wheel and portable wheel used in stationary position shall be equipped with a hood or band guard strong enough to withstand the shock of a bursting wheel. A guard of this type shall also be used on every portable wheel where the nature of the work will permit.

(c) *Spindle.* The spindle and nut and flange projection, if any, shall be guarded.

(d) *Mountings and fastenings.* Hoods shall be mounted so as to maintain proper alignment with the wheels, and the strength of the fastenings shall exceed the strength of the hood.

(e) *Dust exhaust provisions.* Hoods on machines used for dry grinding and other operations where dust is produced shall have provisions made for connection to an exhaust system.

(f) *Work rests.* Work rests shall be kept adjusted close to the wheel with a maximum distance of ⅛ inch to prevent the work from being caught between the wheel and the rest.

§ 50–204.200 Revolving drums and cylinders.

Every revolving barrel, drum or other revolving container shall be guarded by an enclosure which is interlocked with the driving mechanism, so that the barrel or drum cannot revolve unless the guard enclosure is in place.

§ 50–204.201 Fans.

When the periphery of the blades of a fan is less than 7 feet above the floor or working level the blades shall be guarded.

WOODWORKING MACHINERY

§ 50–204.208 Circular table saws.

(a) *Guards.* Each circular saw shall be guarded by a hood which shall com-

pletely enclose that portion of the saw above the table and shall be arranged so that the hood will automatically adjust itself to the thickness of, and remain in contact with, the material being cut. Where there is a possibility of contact with a portion of a circular saw beneath or behind the saw table, that portion shall be covered with a guard to prevent accidental contact with the saw.

(b) *Spreaders.* Each circular ripsaw shall be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. A spreader need not be used for work which is restricted to grooving, dadoing, or rabbeting.

(c) *Non-kickback fingers or dogs.* Each circular ripsaw shall be provided with non-kickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator.

§ 50-204.209 Swing and sliding cut-off saws.

The requirements expressed in this section apply to all swing cut-off saws and to those sliding cut-off saws which are mounted above the table.

(a) *Hood.* Each of the saws to which this section applies shall be provided with a hood that shall completely enclose the upper half of the saw, the arbor end, and the point of operation at all positions of the saw. The hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters and broken saw teeth. It shall be designed so that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table the hood will rise on top of the fence, and when the saw is moved forward the hood will drop on top of and remain in contact with the table or material being cut.

(b) *Counterweights.* Each of the saws to which this section applies shall be provided with an effective device to return the saw automatically to the back of the table when released at any point in its travel.

(c) *Limit stops.* Limit chains or other equally effective devices shall be provided to prevent the saw from swinging beyond the front or back edges of the table.

(d) *Latches.* A latch or equivalent device shall be provided to prevent the saw from rebounding upon its return to the rear of the table.

§ 50-204.210 Inverted swing cut-off saws (jump saws).

Inverted swing-cut-off saws shall be provided with a hood that will cover the part of the saw that protrudes above the top of the table or above the material being cut. It shall automatically adjust itself to the thickness of, and remain in contact with, the material being cut.

§ 50-204.211 Radial saws.

(a) *Hoods and guards.* The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

(b) *Spreaders.* When radial saws are used for ripping, a spreader shall be provided meeting the requirements expressed in section 50-204.208(b).

(c) *Non-kickback fingers or dogs.* Each radial saw used for ripping shall be provided with non-kickback fingers or dogs located on both sides of the saw so as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator.

(d) *Adjustable stops and return devices.* An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations.

§ 50-204.212 Portable circular saws.

All portable power-driven saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the arc required to permit the base to be tilted. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

§ 50-204.213 Band saws and band resaws.

(a) *Enclosing band-saw blades.* All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Band-saw wheels shall be fully encased. The outside periphery of the enclosure shall be solid. The front and back of the band wheels shall be either enclosed by solid material or by wire mesh or perforated metal. Such mesh or perforated metal shall be not less than 0.037 inch (U.S. Gauge No. 20), and the openings shall be not greater than ½ inch. Solid material used for this purpose shall be of an equivalent strength and firmness. The guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard shall protect the operator from the saw blade at the front and outer side. Brakes shall be provided to stop the wheel in case of blade breakage.

(b) *Tension.* Each band-saw machine shall be provided with a tension control device to indicate a proper tension for the standard saws used on the machine.

(c) *Feed rolls.* Feed rolls of band resaws shall be protected with a guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point.

§ 50-204.214 Jointers.

(a) *Point of operation.* (1) Each hand-fed planer and jointer with horizontal head shall be equipped with a cylindrical cutting head, the knife projection of which shall not exceed ⅛ inch beyond the cylindrical body of the head.

(2) The clearance between the edge of the rear table and the cutter head shall be not more than ⅛ inch. The table throat opening shall be not more than 2½ inches when tables are set or aligned with each other for zero cut.

(b) *Automatic guards.* (1) Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover all the section of the head on the working side of the fence or gage. The guard shall keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and remain in contact with the material at all times.

(2) Each hand-fed jointer with horizontal cutting head shall have a guard which will cover the section of the head back of the gage or fence.

(3) Each wood jointer with vertical head shall have either an exhaust hood or other guard so arranged as to enclose completely the revolving head, except for a slot of such width as may be necesssary and convenient for the application of material to be jointed.

§ 50-204.215 Wood shapers, hand-fed panel raisers, and similar machines.

(a) The cutting heads of each wood shaper, hand-fed panel raiser, or other similar machine not automatically fed, shall be enclosed with a cage or adjustable guard designed to keep the operator's hands away from the cutting edge. The diameter of circular shaper guards shall be not less than the greatest diameter of the cutter. In no case shall a warning device of leather or other material attached to the spindle be acceptable.

(b) Cylindrical heads shall be used whenever the nature of the work will permit.

(c) All double-spindle shapers shall be provided with a starting and stopping device for each spindle.

§ 50-204.216 Planing, molding, sticking and matching machines.

(a) Each planing, molding, sticking, and matching machine shall have all cutting heads, and saws if used, covered by a metal guard. If such guard is constructed of sheet metal, the material used shall be not less than ⅛ inch in thickness; and, if cast iron is used, it shall be not less than 3/16 inch in thickness.

(b) Where an exhaust system is used, the guards shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in paragraph (a) of this section.

(c) Feed rolls shall be guarded by a hood or suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be fastened to the frame carrying the rolls so as to remain in adjustment for any thickness of stock.

(d) Surfacers or planers used in processing multiple pieces of material simultaneously shall be provided with sec-

tional infeed rolls having sufficient yield in the construction of the sections to provide feeding contact pressure on the stock, over the permissible range of variation in stock thickness specified or for which the machine is designed. In lieu of such yielding sectional rolls, suitable section kickback finger devices shall be provided at the infeed end.

§ 50-204.217 Sanding machines.

(a) *Feed rolls.* Feed rolls of self-feed sanding machines shall be protected with a semi-cylindrical guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material firmly secured to the frame carrying the rolls so as to remain in adjustment for any thickness of stock. The bottom of the guard shall come down to within ¾ inch of a plane formed by the bottom or contact face of the feed roll, where it touches the stock.

(b) *Drum sanding machines.* Each drum sanding machine shall have an exhaust hood, or other guard, arranged to enclose the revolving drum, except for that portion of the drum above the table, if a table is used.

(c) *Disk sanding machines.* Each disk sanding machine shall have the exhaust hood, or other guard if no exhaust system is required, arranged to enclose the revolving disk, except for that portion of the disk above the table, if a table is used.

(d) *Belt sanding machines.* Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs on to a pulley. The unused run of the sanding belt shall be guarded against accidental contact.

HOUSEKEEPING

§ 50-204.229 General.

All phases of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.

§ 50-204.230 Floors.

(a) Floors of every workroom shall be maintained in a clean, and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places should be provided where practicable.

(b) Cleaning and sweeping shall be done in such a manner as to minimize the contamination of the air with dust and, so far as is practicable, should be done outside of working hours.

(c) Every floor, working place, and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.

§ 50-204.231 Flammable materials.

Oily rags, oily waste, waste paper and other flammable and combustible material shall be stored in tightly closed metal containers. Magnesium and other flammable metal scraps shall not be mixed with other scrap. All flammable scrap material of any kind shall be removed from the work areas daily.

§ 50-204.232 Tools and other materials.

Tools, materials, or debris shall not be strewn about in a manner which may cause tripping or other hazards.

§ 50-204.233 Receptacles for waste disposal.

Any receptacle used for decaying solid or liquid waste or refuse shall be so constructed that it does not leak and may be conveniently and thoroughly cleaned, and it shall be maintained in a sanitary condition. Such a receptacle shall be equipped with a tight-fitting cover.

§ 50-204.234 Sweeping and refuse removal.

All sweepings, solid or liquid waste, refuse, and garbage shall be removed in such a manner as to avoid creating a nuisance or menace to health and as often as necessary to maintain the place of employment in a sanitary condition.

TOILET FACILITIES AND WASH ROOMS

§ 50-204.239 Separate toilet for each sex.

Every place of employment shall be provided with adequate toilet facilities which are separate for each sex.

§ 50-204.240 Location.

Toilet facilities shall be provided so as to be readily accessible to all employees. Toilet facilities so located that employees must use more than one floor-to-floor flight of stairs are not considered as readily accessible.

§ 50-204.241 Water closets.

Water closets, or chemical closets or privies where permitted by local law, shall be provided for each sex and shall be in accordance with the following table. The number to be provided for each sex shall in every case be based on the maximum number of persons of that sex employed at any one time at work on the premises for which the facilities are furnished. When persons other than employees are permitted the use of toilet facilities on the premises, a reasonable allowance shall be made for such other persons in computing the minimum number of toilet facilities required.

(a)

Number of persons	*Minimum number of facilities*
1 to 9	1
10 to 24	2
25 to 49	3
50 to 74	4
75 to 100	5
Over 100	(1)

[1] 1 for each additional 30 persons.

Where 10 or more are employed, one water closet less than the number specified in the foregoing may be provided for men for each urinal, except that the number of water closets in such cases may not be reduced to less than two-thirds of the number specified in the foregoing. Two feet of trough urinal shall be considered as equivalent to one individual urinal.

(b) An adequate supply of toilet paper with holder shall be provided for every water closet.

(c) Covered receptacles shall be kept in all toilet rooms used by women.

§ 50-204.242 Construction of toilet rooms.

(a) Each toilet facility (closet) shall occupy a separate compartment, equipped with a door, latch, and clothes hook.

(b) The walls of compartments or partitions between fixtures may be less than the height of room walls, but the top shall not be less than six feet from the floor and the bottom not more than one foot from the floor.

(c) The door to every toilet room shall be fitted with an effective self-closing device, and the entrance to the toilet rooms shall be so screened that the interior of the toilet room is not visible from the workroom.

(d) The floors, walls, ceilings, partitions, and doors of all toilet rooms shall be of a finish that can be easily cleaned.

(e) Toilet rooms, except those in work places accessible to men only, shall be completely enclosed with solid material that is nontransparent from the outside.

§ 50-204.243 Chemical closets and privies.

When chemical closets or privies are permitted by local law they shall be of a type approved by the health authorities having jurisdiction and shall be maintained in a sanitary condition.

§ 50-204.244 Washing facilities.

Adequate facilities for maintaining personal cleanliness shall be provided in every place of employment. These shall be convenient for the employees for whom they are provided and shall be maintained in a sanitary condition.

(a) At least one lavatory (wash basin) with adequate hot and cold water, shall be provided for every 20 employees (men or women) or portion thereof, up to 100 persons, and one lavatory (wash basin) for each additional 25 persons or portion thereof. Twenty-four inches of sink with individual faucet shall be considered as equal to one lavatory. In all instances, a suitable cleansing agent shall be provided at each wash place.

(b) Where employees are exposed to skin contamination by poisonous, infectious, or irritating material, one lavatory supplied with hot and cold water, shall be provided for every 5 employees.

(c) One shower bath with ample supply of hot and cold water from one fixture shall be supplied for every 15 workers, or portion thereof, exposed to excessive heat or to skin contamination by poisonous, infectious, or irritating material.

(d) Individual hand towels, or sections thereof, of cloth or paper, or mechanical apparatus for drying the hands, shall be provided. Proper receptacles or other sanitary means shall be maintained for the disposal of used towels. Towels for common use shall not be provided.

(e) Adequate washing facilities shall be provided in every toilet room or adjacent thereto.

§ 50-204.245 Change rooms.

Separate change or dressing rooms shall be provided for each sex wherever it is the practice to change from street clothes or wherever it is necessary to change because the work performed involves exposure to excessive dirt, heat, fumes, vapor, or moisture. Where change rooms are not provided, facilities shall be furnished for hanging outer garments:

(a) Where employees' work clothes are exposed to contamination by poisonous, infectious, or irritating material, facilities shall be provided in change rooms so that street and work clothes will not be stored in contact with each other.

(b) Where the process in which the worker is engaged is such that his working clothes become wet or have to be washed between shifts, provision shall be made to insure that such clothing is dry before re-use.

§ 50-204.246 Retiring rooms for women.

Where 10 or more women are employed at any one time, at least one retiring room shall be provided.

(a) Where less than 10 women are employed and a retiring room is not furnished, some equivalent space shall be provided which can be properly screened for privacy and made suitable for the use of women employees.

(b) At least one couch or bed shall be provided in every place where women are employed. The number of such beds or couches required shall be as follows:

	Beds
1 to 100	1
100 to 250	2

1 additional bed for each additional 250 women employees. A minimum of 60 square feet per bed shall be provided.

LUNCH ROOMS AND FOOD HANDLING

§ 50-204.251 Location.

In all places of employment where employees lunch on the premises, an adequate space suitable for that purpose shall be provided for the maximum number of employees who may use such space at one time. Such space shall be separate from any location where there is exposure to toxic materials.

§ 50-204.252 Waste food disposal.

A covered receptacle shall be provided and shall be used by employees for the disposal of all waste food.

§ 50-204.253 Presence of toxic materials.

No employee shall be permitted to store or eat any part of his lunch or other food at any time where there are present any toxic material or other substance that may be injurious to health.

DRINKING WATER

§ 50-204.258 Potable water.

(a) An adequate supply of potable water, approved as to source and distribution by appropriate authority, shall be provided for drinking, washing and cooking purposes in all places of employment.

(b) In all instances where water is cooled by ice made from non-potable water the construction of the container shall be such that the ice does not come in direct contact with the water.

(c) Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, shall not be allowed.

(d) The common drinking cup is prohibited.

(e) Where single service cups are supplied, a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

§ 50-204.259 Non-potable water.

Outlets for non-potable water, such as water for industrial or fire-fighting purposes only, shall be posted to indicate that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

MEDICAL SERVICES

§ 50-204.264 Medical services.

(a) The employer shall assure the ready availability of qualified medical personnel for advice and consultation on plant health problems, for emergency medical services, and for the supervision of first-aid attendants.

(b) In the absence of an infirmary, a person trained to render first aid and a kit containing the following items shall be available at every place of employment.

1 Adhesive Plaster ½" x 5 yd. Roll.
1 Adhesive Plaster, 1 x 5 yd. Roll.
2 Absorbent Cotton, 2-ounce packages.
1 Absorbent Gauze, 1 yd.
1 Activol Soap, 2-ounce bottle.
100 Adhesive Bandages, 1".
1 Aromatic Spirits of Ammonia, 2-ounce bottle.
1 Boric Acid Solution, 2-ounce bottle.
1 Castor Oil, 2-ounce bottle.
12 Compress Bandages, 2".
4 Compress Bandages, 4".
12 Cotton Wound Applicators.
1 Eye Cup.
1 Eye Dropper.
6 Finger Cots.
6 Foille for Burns, ⅛ oz. tubes.
1 Foille for Burns, 2-ounce bottle.
6 Gauze Roller Bandages 1" x 6 yds.
6 Gauze Roller Bandages 2" x 6 yds.
6 Gauze Roller Bandages 3" x 6 yds.
10 Gauze Sterilized, 12" x 16".
1 Merthiolate, Tincture, 2-ounce bottle.
1 Medicine Glass.
1 Manual First Aid Instruction.
1 Scissors Pair 4" Bandage.
1 Tweezers Pair 3½".
12 Safety Pins.
1 Spoon.
1 Tourniquet.
2 Triangular Bandages 40".
6 Wood Splints for Fractures.
12 Wood Tongue Depressors.

EYE PROTECTION

§ 50-204.269 General requirement.

Eye protection shall be provided where persons are exposed to any hazard which may cause injury to the eyes from the following operations: chipping, caulking, coarse grinding, riveting, sledging, scaling, light grinding, stone dressing, spot welding, woodworking, metal-working, babbitting, casting, dipping in hot metal baths, handling of acids and caustics, electric arc welding, oxyacetylene and oxyhydrogen welding and cutting, furnace tending, and irradiation with ultraviolet light.

§ 50-204.270 First-aid for chemical burns.

Where workers' eyes may be exposed to injurious chemical materials such as acids, caustics, etc., suitable facilities for quick drenching or flushing of the eyes shall be provided within the workroom, for immediate emergency use.

ENVIRONMENTAL CONDITIONS

§ 50-204.275 Toxic gases, vapors, fumes, dusts, and mists.

No employee shall be exposed to any of the gases, vapors, mists, dusts, or fumes on the list in section 50-204.276 which exceed the limits there stated when applied to him on an average basis for an eight hour workday, unless he is protected therefrom by respiration equipment approved for the purpose by the United States Bureau of Mines of the United States Department of the Interior and operated in accordance with the recommendations of its manufacturer. Exposures without such equipment which exceed such limits temporarily, without exceeding them on a daily average basis, or which involve more than one such toxic substance, regardless of the degree of its concentration, are also hazardous unless they are undertaken in strict conformity with prior written approval of a qualified industrial hygienist who has studied the particular circumstances of exposure and the toxic substances and concentrations involved.

§ 50-204.276 Threshold limit values.

Gases and vapors—Substance	Parts per million parts of air by volume	Milligrams per cubic meter of air
Acetaldehyde	200	360
Acetic acid	10	25
Acetic anhydride	5	20
Acetone	1,000	2,400
Acrolein	.3	1.2
Acrylonitrile	20	45
Allyl alcohol	5	12
Allyl chloride	5	15
Allyl propyl disulfide	2	12
Ammonia	100	70
Amyl acetate	200	1,050
Amyl alcohol (isoamyl alcohol)	100	360
Aniline	5	19
Arsine	.05	.2
Benzene (benzol)	25	80
Benzyl chloride	1	5
Bromine	1	7
Butadiene (1,3-butadiene)	1,000	2,200
Butanone (methyl ethyl ketone)	250	740
Butyl acetate (n-butyl acetate)	200	950
Butyl alcohol	100	300
Butylamine	5	15
Butyl cellosolve (2-butoxyethanol)	50	240
Carbon dioxide	5,000	9,000
Carbon disulfide	20	60
Carbon monoxide	100	110
Carbon tetrachloride	25	160
Cellosolve (2-ethoxyethanol)	200	740
Cellosolve acetate (2-ethoxyethyl acetate)	100	540
Chlorine	1	3
Chlorine trifluoride	.1	.4
Chlorobenzene (monochlorobenzene)	75	350
Chloroform (trichloromethane)	100	490
1-Chloro-1-nitropropane	20	100
Chloropicrin	1	7
Chloroprene (2-chloro-1,3-butadiene)	25	90
Cresol (all isomers)	5	22
Cyclohexane	400	1,400
Cyclohexanol	100	410

Gases and vapors—Substance	Parts per million parts of air by volume	Milligrams per cubic meter of air
Cyclohexanone	100	400
Cyclohexene	400	1,350
Cyclopropane	400	690
Decaborane	.05	.3
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
Diborane	.1	.1
o-Dichlorobenzene	50	300
Dichlorodifluoromethane	1,000	4,950
1,1-Dichloroethane	100	400
1,2-Dichloroethane (ethylene dichloride)	100	400
1,2-Dichloroethylene	200	790
Dichloroethyl ether	15	90
Dichlorofluoromethane	1,000	4,200
1,1-Dichloro-1-nitroethane	10	60
Dichlorotetrafluoroethane	1,000	7,000
Diethylamine	25	75
Difluorodibromomethane	100	860
Diisobutyl ketone	50	290
Dimethylaniline (N-dimethyl-aniline)	5	25
Dimethylsulfate	1	5
Dioxane (diethylene dioxide)	100	360
Ethyl acetate	400	1,400
Ethyl acrylate	25	100
Ethyl alcohol (ethanol)	1,000	1,900
Ethylamine	25	45
Ethyl benzene	200	870
Ethyl bromide	200	890
Ethyl chloride	1,000	2,600
Ethyl ether	400	1,200
Ethyl formate	100	300
Ethylsilicate	100	850
Ethylene chlorohydrin	5	16
Ethylenediamine	10	30
Ethylene dibromide (1,2-dibromoethane)	25	190
Ethylene imine	3	9
Ethylene oxide	50	90
Fluorine	.1	.2
Fluorotrichloromethane	1,000	5,600
Formaldehyde	5	6
Furfural	5	20
Gasoline	500	2,000
Heptane (n-heptane)	500	2,000
Hexane (n-hexane)	500	1,800
Hexanone (methyl butyl ketone)	100	410
Hexone (methyl isobutyl ketone)	100	410
Hydrazine	1	1.3
Hydrogen bromide	5	17
Hydrogen chloride	5	7
Hydrogen cyanide	10	11
Hydrogen fluoride	3	2
Hydrogen peroxide, 50%	1	1.4
Hydrogen selenide	.05	.2
Hydrogen sulfide	20	30
Iodine	.1	1
Isophorone	25	140
Isopropylamine	5	12
Methyl oxide	25	100
Methyl acetate	200	610
Methyl acetylene	1,000	1,650
Methyl acrylate	10	35
Methyl alcohol (methanol)	200	260
Methyl bromide	20	80
Methyl cellosolve (2-methoxyethanol)	25	80
Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25	120
Methyl chloride	100	210
Methylal (dimethoxymethane)	1,000	3,100
Methyl chloroform (1,1,1-trichloroethane)	500	2,700
Methylcyclohexane	500	2,000
Methylcyclohexanol	100	470
Methylcyclohexanone	100	460
Methyl formate	100	250
Methyl isobutyl carbinol (Methyl amyl alcohol)	25	100
Methyl styrene	100	480
Methylene chloride (dichloromethane)	500	1,750
Monomethyl aniline	2	9
Naphtha (coal tar)	200	800
Naphtha (petroleum)	500	2,000
Nickel carbonyl	.001	.007
Nitric acid	5	25
p-Nitroaniline	1	6
Nitrobenzene	1	5
Nitroethane	100	310
Nitrogen dioxide	5	9
Nitroglycerin	.5	5
Nitromethane	100	250
2-Nitropropane	50	180
Nitrotoluene	5	30
Octane	500	2,350
Ozone	.1	.2
Perdichlorobenzene	75	450
Pentane	1,000	2,950
Pentanone (methyl propyl ketone)	200	700
Perchlorethylene (tetrachloroethylene)	200	1,350
Phenol	5	19
Phenylhydrazine	5	22
Phosgene (carbonyl chloride)	1	4
Phosphine	.05	.07
Phosphorus trichloride	.5	3
Propyl acetate	200	840
Propyl alcohol (isopropyl alcohol)	400	980
Propyl ether (isopropyl ether)	500	2,100
Propylene dichloride (1,2-dichloropropane)	75	350
Propylene imine	25	60
Propylene oxide	100	240
Pyridine	10	30
Quinone	.1	.4
Silbine	.1	.5
Stoddard solvent	500	2,900
Styrene monomer (phenylethylene)	100	420
Sulfur dioxide	5	13
Sulfur hexafluoride	1,000	6,000
Sulfur monochloride	1	6
Sulfur pentafluoride	.025	.25
Tertiary butyl alcohol	100	300
p-Tertiary-butyltoluene	10	60
1,1,2,2-Tetrachloroethane	5	35
Tetrahydrofuran	200	590
Tetranitromethane	1	8
Toluene (toluol)	200	750
o-Toluidine	5	22
Trichloroethylene	200	1,080
Triethylamine	25	100
Trifluoromonobromomethane	1,000	6,100
Turpentine	100	560
Vinyl chloride (chloroethylene)	500	1,300
Vinyl toluene	100	480
Xylene (xylol)	200	870
Xylidine	5	25

TOXIC DUSTS, FUMES, AND MISTS

Substance	Milligrams per cubic meter of air
Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-1,4,5,8-dimethanonaphthalene)	0.25
Ammate (ammonium sulfamate)	15
Antimony	.5
ANTU (alpha naphthyl thiourea)	.3
Arsenic	.5
Barium	.5
Beryllium	2ym3
Cadmium oxide fume	.1
Calcium arsenate	.1
Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane)	2
Chlorinated camphene, 60%	.5
Chlorinated diphenyl oxide	.5
Chlorodiphenyl (42% chlorine)	1
Chlorodiphenyl (54% chlorine)	.5
Chromic acid and chromates (as CrO_3)	.1
Crag herbicide (sodium 2-[sodium 2-[2,4-dichlorophenoxy] ethanol hydrogen sulfate)	15
Cyanide (as CN)	5
2,4-D(2,4-dichlorophenoxyacetic acid)	10
DDT (2,2-bis [p-chlorophenyl]-1,1,1-trichloroethane)	1
Dieldrin (1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4,5,8-dimethanonaphthalene)	.25
Dinitrobenzene	1
Dinitrotoluene	1.5
Dinitro-o-cresol	.2
EPN (O-ethyl O-p-nitrophenyl thionobenzenephosphonate)	.5
Ferbam (ferric dimethyl dithiocarbamate)	15
Ferrovanadium dust	1
Fluoride	2.5
Hydroquinone	2
Iron oxide fume	15
Lead	.2
Lead arsenate	.15
Lindane (hexachlorocyclohexane, gamma isomer)	.5

TOXIC DUSTS, FUMES, AND MISTS—Con.

Substance	Milligrams per cubic meter of air
Magnesium oxide fume	15
Malathion (O,)-dimethyl dithiophosphate of diethyl mercaptosuccinate)	15
Manganese	6
Mercury	.1
Mercury (organic compounds)	.01
Methoxychlor (2,2-di-p-methoxyphenyl-1,1,1-trichloroethane)	15
Molybdenum:	
soluble compounds	5
insoluble compounds	15
Nicotine	.5
Parathion (O,O-diethyl O-p-nitrophenyl thiophosphate)	.1
Pentachloronaphthalene	.5
Pentachlorophenol	.5
Phosphorus (yellow)	.1
Phosphorus pentachloride	1
Phosphorus pentasulfide	1
Picric acid	.1
Pyrethrum	2
Rotenone	5
Selenium compounds (as Se)	.1
Sodium hydroxide	2
Sodium fluoroacetate (1080)	.1
Strychnine	.15
Sulfuric acid	1
TEDP (tetraethyl dithionopyrophosphate)	.2
TEPP (tetraethyl pyrophosphate)	.05
Tellurium	.1
Tetryl (2,4,6-trinitrophenylmethylnitramine)	1.5
Thiram (tetramethyl thiuram disulfide)	5
Thallium (soluble compounds)	.1
Titanium dioxide	15
Trichloronaphthalene	5
Trinitrotoluene	1.5
Uranium:	
soluble compounds	.05
insoluble compounds	.25
Vanadium:	
V_2O_5 dust	.5
V_2O_5 fume	.1
Warfarin (3-[acetonylbenzyl]-4-hydroxycoumarin)	.5
Zinc oxide fumes	15
Zirconium compounds (as Zr)	5

MINERAL DUSTS

	Millions of particles per cubic meter of air
Aluminum oxide	50
Asbestos	5
Dust (nuisance, no free silica)	50
Mica (below 5% free silica)	20
Portland cement	50
Silica:	
High (above 50% free SiO_2)	5
Medium (5 to 50% free SiO_2)	20
Low (below 5% free SiO_2)	50
Silicon carbide	50
Soapstone (below 5% free SiO_2)	20
Talc	20

VENTILATION

§ 50-204.288 General ventilation and temperature requirements.

(a) Outside air shall be provided to all workrooms at the rate of 15 cubic feet per minute per person, or one and one-half air changes per hour, whichever is greater. In most instances, leakage through walls, doors, and windows will produce at least one and one-half air changes per hour.

(b) A minimum air temperature of 60° F. should be maintained at all workrooms where work of a strenuous nature is performed, and a minimum air tem-

perature of 65° F. should be maintained in all other workrooms unless prohibited by process requirements.

§ 50-204.289 Local exhaust ventilation.

(a) Every local exhaust ventilation system shall produce and maintain a movement of air toward the opening, sufficient to prevent escape of contaminant to the workroom during working hours, beyond the limits shown in section 50-204.276.

(b) Air flow through branch and main ducts shall be sufficient to transport the contaminant through the system without settling.

(c) Piping shall be located so as to be accessible for inspection and maintenance.

(d) Air flow equipment including hoods, pipes, fans, motors, and collectors shall be effectively grounded.

(e) Two or more operations involving more than one substance shall not be permitted to be connected to the same exhaust system when a combination of the substances removed may constitute a fire hazard, an explosion hazard, or otherwise dangerous mixture.

(f) Those processes or operations using or generating flammable dusts, gases, fumes, vapors, mists, fibers or other impurities shall be completely protected from all sources of ignition.

(g) The capacity of an exhaust system shall be calculated on the basis of all hoods, booths, and enclosures connected to the system being open, except where the system is so interlocked that only a portion of it can be operated at a given time, in which case the capacity should be calculated on the basis that all the hoods in the group requiring the greatest volume rate of exhaust are open.

(h) Suitable air inlets shall be provided for replacement of exhausted air.

(i) Exhaust systems handling dusts and discharging to the outer air shall be provided with suitable air-cleaning devices to remove air contaminants prior to the discharge to the outer air, except under unusual circumstances.

(j) The discharge from any exhaust system shall be such that no air contamination therefrom will enter any window, door, or other opening of any work space in quantities sufficient to create a health hazard to such space or create a nuisance to surrounding areas.

(k) Collected materials shall be removed at intervals frequent enough to insure that the exhaust system will meet the requirements of section 50-204.288 (a), at all times.

Noise

§ 50-204.293 Noise.

Noise shall be reasonably reduced or eliminated as a means of preventing fatigue or accidents.

Personal Protective Equipment

§ 50-204.298 Personal protective equipment.

Personal protective equipment or protective shields or barriers shall be provided and maintained in usable condition whenever substances, radiation, or mechanical irritants are encountered in a manner capable of causing injury or impairment in function of any part of the body through skin or mucous membrane absorption.

Bituminous Coal and Lignite Mines

§ 50-204.300 Federal Mine Safety Code.

The Federal Mine Safety Code for Bituminous Coal and Lignite Mines of the United States, Part I—Underground Mines, and Part II—Strip Mines, as published by the Bureau of Mines, United States Department of Interior is hereby adopted by reference as the safety and health standard required for observance in the bituminous coal and lignite mining to which section 1(e) of the Walsh-Healey Public Contracts Act has application.

Signed at Washington, D.C., this 12th day of December 1960.

James P. Mitchell,
Secretary of Labor.

[F.R. Doc. 60-11689; Filed, Dec. 27, 1960; 8:45 a.m.]

CERTIFICATE OF COMPLIANCE

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Dated: November 9, 2015

/s/ William W.C. Harty
Counsel for Appellee

CERTIFICATE OF FILING AND SERVICE

I hereby certify that on this 9th day of November, 2015, I caused this Brief of Appellee to be filed electronically with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to the following registered CM/ECF users:

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